KENWOOD

COMPACT AUDIO SYSTEM

MIDI M-97
MIDI M-97M

INSTRUCTION MANUAL

KENWOOD CORPORATION

Introduction

Your choice of this product indicates that you are a devotee to excellence in sound reproduction.
We appreciate your patronage and take pride in the long tradition of quality components that our company represents.
So that you can get the most out of your unit, we suggest that you take the time to read through this manual before you hook up and operate your system. This will acquaint you with operating features and system-connection considerations so that your listening pleasure will be enhanced right from the start.
You will notice that in all aspects of planning, engineering, styling, operating convenience and adaptability we have sought to anticipate your needs and desires.
Keep this manual handy for future reference.

For your records

Record the serial number, found on the back of the unit, in the spaces designated on the warranty card, and in the space provided below. Refer to the model and serial numbers whenever you call upon your dealer for information or service on this product.
Model _____ Serial Number _____

Unpacking

Unpack the unit carefully and make sure that all accessories are put aside so they will not be lost.
Examine the unit for any possibility of shipping damage. If your unit is damaged or fails to operate, notify your dealer immediately. If your unit was shipped to you directly, notify the shipping company without delay. Only the consignee (the person or company receiving the unit) can file a claim against the carrier for shipping damage.
We recommend that you retain the original carton and packing materials for use should you transport or ship the unit in the future.

The marking of products using lasers (Except for some areas).

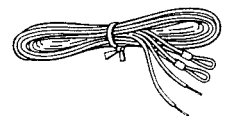
CLASS 1
LASER PRODUCT

This label is attached to the rear panel and says that the component uses laser beams that have been classified as Class 1. It means that the unit is utilizing laser beams that are of a weaker class. There is no danger of hazardous radiation outside the unit.

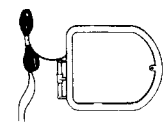
WARNING NOTICE:
IN MOST CASES IT IS AN INFRINGEMENT OF COPYRIGHT TO MAKE COPIES OF TAPES OR DISCS WITHOUT THE PERMISSION OF THE COPYRIGHT OWNERS. ANYONE WISHING TO COPY COMMERCIALLY AVAILABLE TAPES OR DISCS SHOULD CONTACT THE MECHANICAL COPYRIGHT PROTECTION SOCIETY LIMITED OR THE PERFORMING RIGHTS SOCIETY LIMITED.

Accessories

T-type (FM) feeder antenna 1

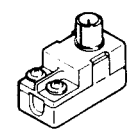


Loop antenna 1

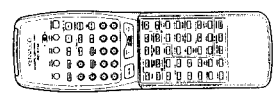


Antenna stand 1

Antenna adaptor (75 Ω/300 Ω) 1

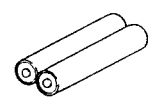


Remote control unit 1



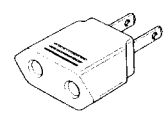
System control cord 2

Battery (AAA/R03)..... 2



Audio cords 4

AC plug adaptor ..... 1 (except for some areas)



For the unit with a European AC plug in areas other than Europe.

When your unit needs to be repaired, bring the entire set (Speakers excluded) to your dealer.

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Caution: Read the pages marked ⚠ carefully to ensure safe operation.

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Before applying power

⚠ **Caution: Read this page carefully to ensure safe operation.**

For the U.S.A. and Canada

Important!

Units shipped to the U.S.A. and Canada are designed for operation on 120 volts AC only.

For Australia and Europe

Important!

Units shipped to Australia are designed for operation on 240 V AC only.

Units shipped to Europe are designed for operation on 230 V AC only.

For the United Kingdom

Important!

Units shipped to the U.K. are designed for operation on 240 volts AC only.

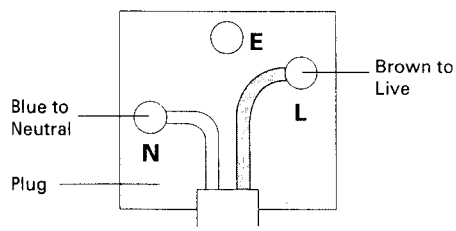
The mains plug must be removed from the wall socket prior to any internal examination.

The wires in this mains lead are coloured in accordance with the following code:

Blue ..... Neutral
Brown ..... Live

The wires in this mains lead must be connected to the terminals in the plug as follows:

Wire colour	Plug terminal marking
Blue	N or Black
Brown	L or Red



Notes:

1. If a 13-amp plug is used, this must be fitted with a 13-amp fuse.
2. If a 3-pin plug with earthing contact is used, no wire must be connected to the E terminal.

For other countries

Important!

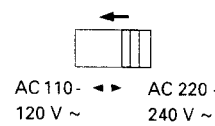
Units shipped to countries other than the above countries are equipped with an AC voltage selector switch on the rear panel. Refer to the following paragraph for the proper setting of this switch.

AC voltage selection

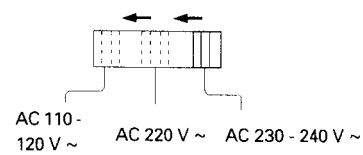
This unit operates on 110 - 120 or 220 - 240 volts AC. The AC voltage selector switch Type A or Type B on the rear panel is set to the voltage that prevails in the area to which the unit is shipped. Before connecting the power cord to your AC outlet, make sure that the setting position of this switch matches your line voltage. If not, it must be set to your voltage in accordance with the following direction.

AC voltage selector switch

Type A



Type B



Move switch lever to match your line voltage with a small screwdriver or other pointed tool.

Note:

Our warranty does not cover damage caused by excessive line voltage due to improper setting of the AC voltage selector switch.

Safety precautions

WARNING: TO PREVENT FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

	CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE, REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.
	THE LIGHTNING FLASH WITH ARROWHEAD SYMBOL, WITHIN AN EQUILATERAL TRIANGLE, IS INTENDED TO ALERT THE USER TO THE PRESENCE OF UNINSULATED "DANGEROUS VOLTAGE" WITHIN THE PRODUCT'S ENCLOSURE THAT MAY BE OF SUFFICIENT MAGNITUDE TO CONSTITUTE A RISK OF ELECTRIC SHOCK TO PERSONS.
	THE EXCLAMATION POINT WITHIN AN EQUILATERAL TRIANGLE IS INTENDED TO ALERT THE USER TO THE PRESENCE OF IMPORTANT OPERATING AND MAINTENANCE (SERVICING) INSTRUCTIONS IN THE LITERATURE ACCOMPANYING THE APPLIANCE.

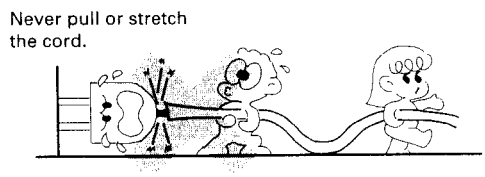
IMPORTANT SAFEGUARDS

⚠ **Caution: Read this page carefully to ensure safe operation.**

Please read all of the safety and operating instructions before operating this appliance. Adhere to all warnings on the appliance and in the instruction manual. Follow all the safety and operating instructions. These safety and operating instructions should be retained for future reference.

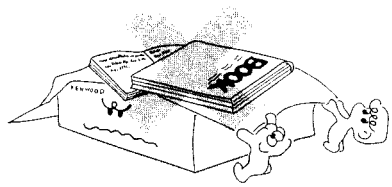
1. **Power sources** – The appliance should be connected to a power supply only of the type described in the instruction manual or as marked on the appliance. If you are not sure of the type of power supply to your home, consult your appliance dealer or local power company. For appliances intended to operate from battery power, or other sources, refer to the instruction manual.

2. **Power-cord protection** – Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, pay particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.



3. **CAUTION – Polarization** – This appliance may be equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety future. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.

4. **Ventilation** – Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the appliance and to protect it from overheating, and these openings must not be blocked or covered. The appliance should be situated so that its location or position does not interfere with its proper ventilation.
   To maintain good ventilation, do not put records or a table-cloth on the appliance. Place the appliance at least 10 cm away from the walls.
   Do not use the appliance on a bed, sofa, rug or similar surface that may block the ventilation openings. This appliance should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.

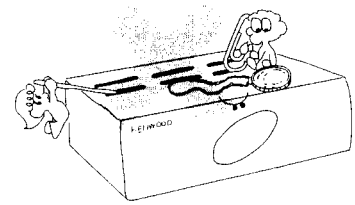


5. **Water and moisture** – The appliance should not be used near water - for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.

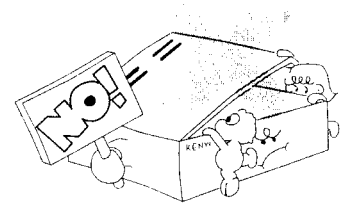
6. **Temperature** – The appliance may not function properly if used at extremely low, or freezing temperatures. The ideal ambient temperature is above +5°C (41°F).

7. **Heat** – The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.

8. **Electric shock** – Care should be taken so that objects do not fall and liquid is not spilled into the enclosure through openings. If a metal objects, such as a hair pin or a needle, comes into contact with the inside of this appliance, a dangerous electric shock may result. For families with children, never permit children to put anything, especially metal, inside this appliance.



9. **Enclosure removal** – Never remove the enclosure. If the internal parts are touched accidentally, a serious electric shock might occur.



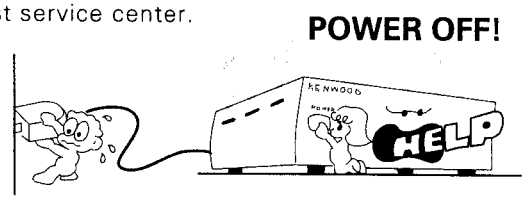
10. **Magnetic fields** – Keep the appliance away from sources of magnetic fields such as TV sets, speaker systems, radios, motorized toys or magnetized objects.

11. **Cleaning** – Unplug this appliance from the wall outlet before cleaning. Do not use volatile solvents such as alcohol, paint thinner, gasoline, or benzine, etc. to clean the cabinet. Use a clean dry cloth.

12. **Accessories** – Do not place this appliance on an unstable cart, stand, tripod, bracket, or table. The appliance may fall, causing serious injury to a child or adult, and serious damage to the appliance. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the appliance. Any mounting of the appliance should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer. An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

13. **Lightning** – For added protection for this appliance during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the appliance due to lightning and power-line surges.

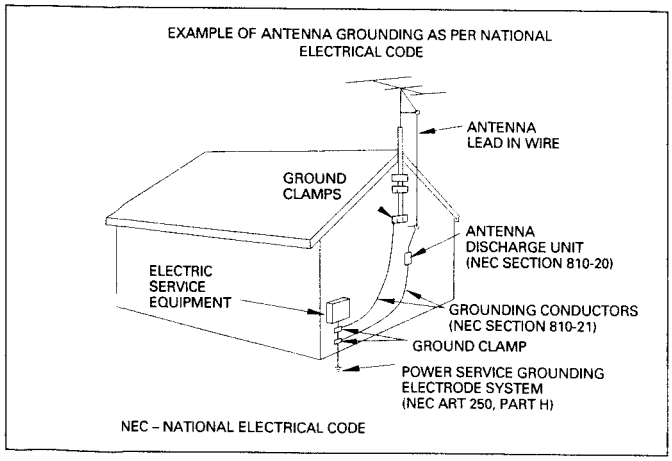
14. **Abnormal smell** – If an abnormal smell or smoke is detected, immediately turn the power OFF and unplug the appliance from the wall outlet. Contact your dealer or nearest service center.



15. **Damage requiring service** – The appliance should be serviced by qualified service personnel when:
A. The power-supply cord or the plug has been damaged.
B. Objects have fallen, or liquid has been spilled into the appliance.
C. The appliance has been exposed to rain or water.
D. The appliance does not appear to operate normally by following the instruction manual. Adjust only those controls that are covered by the instruction manual as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the appliance to its normal operation.
E. The appliance has been dropped, or the enclosure damaged.
F. The appliance exhibits a marked change in performance.

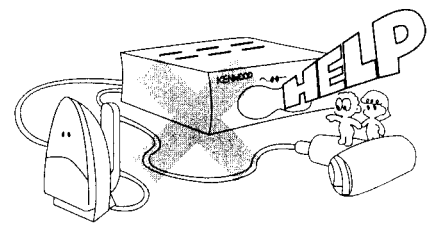
16. **Servicing** – The user should not attempt to service the appliance beyond that described in the instruction manual. All other servicing should be referred to qualified service personnel.

17. **Outdoor antenna grounding** – If an outside antenna is connected to the appliance, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges. Article 810 of the National Electrical Code ANSI/ NFPA 70, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Figure.


EXAMPLE OF ANTENNA GROUNDING AS PER NATIONAL ELECTRICAL CODE
ANTENNA LEAD IN WIRE
GROUND CLAMPS
ANTENNA DISCHARGE UNIT (NEC SECTION 810-20)
ELECTRIC SERVICE EQUIPMENT
GROUNDING CONDUCTORS (NEC SECTION 810-21)
GROUND CLAMP
POWER SERVICE GROUNDING ELECTRODE SYSTEM (NEC ART 250, PART H)
NEC – NATIONAL ELECTRICAL CODE

18. **Power lines** – An outside antenna system should not be located in the vicinity of overheated power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal.

19. **AC outlets** – Do not connect other audio equipment with a power consumption larger than that specified to the AC outlet on the rear panel. Never connect other electrical appliances, such as an iron or toaster, to it to prevent fire or electric shock.



20. **Overloading** – Do not overload wall outlets, extension cords, or integral convenience receptacles as this can result in a risk of fire or electric shock.

21. **Attachment** – Do not use attachments not recommended by the appliance manufacturer as they may cause hazards.

22. **Replacement parts** – When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original parts. Unauthorized substitutions may result in fire, electric shock, or other hazards.

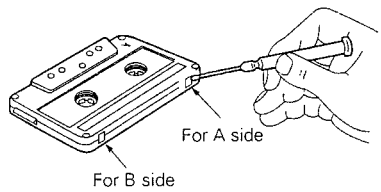
23. **Safety check** – Upon completion of any service or repairs to this appliance, ask the service technician to perform safety checks to determine that the appliance is in proper operating condition.

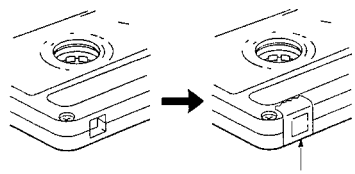
Notes:
1. Item 3 is not required except for grounded or polarized equipment.
2. Item 17 and 18 are not required except for units provided with antenna terminals.
3. Item 17 complies with UL in the U.S.A.

Before operation

■ Notes on cassette tape

- **Safety tab** (accidental erasure prevention tab)
  After an important recording has been finished, break the safety tab, to prevent the recorded contents from being erased or recorded on accidentally.

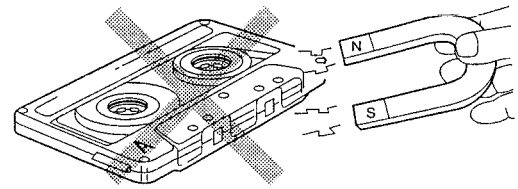




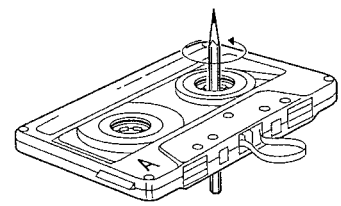
To re-record

Cover with adhesive tape.
Apply tape only to the position where the tab has been removed.

- **To store cassette tapes**
  Do not store the tapes in a place which is subject to direct sunlight, or near equipment that generates heat. Keep the cassette tapes away from any magnetic field.

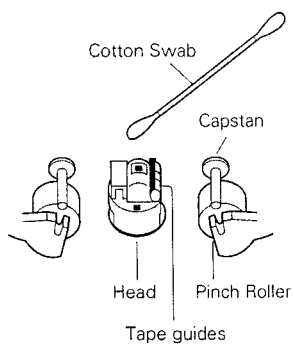


- **When there is slack in the tape**
  In such a case, insert a pencil into the reel hole and wind the reel hub to remove the slack.



Notes:
1. 120-minute cassette tape:
   Since a 120-minute cassette tape is very thin, the tape could adhere to the pinch roller or be easily cut. It is recommended that these tapes not be used with this unit to prevent possible damage.
2. Endless tapes:
   Do not use an endless tape, as this could damage the mechanism of the unit.

■ Cleaning the head section



Cleaning the heads and peripheral components:
For maintaining the best condition of the deck and for longer service life, always keep the head (recording/playback/erase), capstan and pinch roller clean.
To clean them, perform the following:
1. Open the cassette holder.
2. Using a cotton swab dipped in alcohol, clean the head (recording/playback/erase), capstan and pinch roller carefully.

Demagnetizing the head
When the recording/playback head is magnetized, the sound quality will be deteriorated. In such a case, demagnetize the head using a commercially available demagnetizer (head eraser).

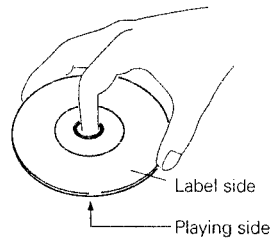
Note:
There are precisely aligned parts around the heads, including the tape guides.
When cleaning, pay special attention so as not to apply shock to them.

■ Beware of condensation

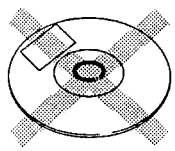
When water vapor comes into contact with the surface of cold material, water drops are produced.
If condensation occurs, correct operation may not be possible, or the unit may not function correctly.
This is not a malfunction, however, and the unit should be dried. (To do this turn the POWER switch ON and leave the unit as it is for several hours.)

Be especially careful in the following conditions
- When the unit is brought from a cold place to a warm place, and there is a large temperature difference.
- When a heater starts operating.
- When the unit is brought from an air-conditioned place to a place of high temperature with high humidity.
- When there is a large difference between the internal temperature of the unit and the ambient temperature, or in conditions where condensation occurs easily.

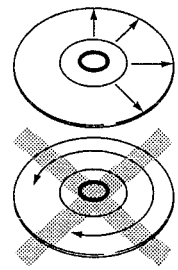
Disc handling precautions



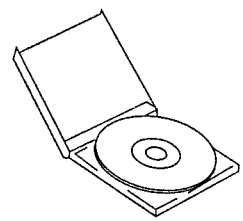
Handling
Hold compact discs so that you do not touch the playing surface.



Do not attach paper or tape to either the playing side or the label side of compact discs.

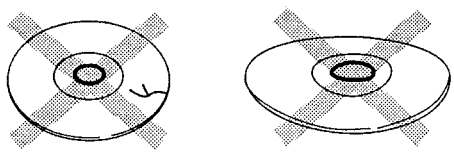


Cleaning
If fingerprints or foreign matter become attached to the disc, lightly wipe the disc with a soft cotton cloth (or similar) from the center of the disc outwards in a radial manner.



Storage
When a disc is not to be played for a long period of time, remove it from the CD player and store it in its case.

Caution on disc used



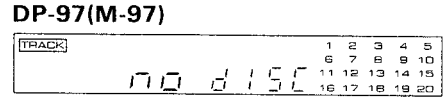
Never play a cracked or warped disc.
During playback, the disc rotates at high speed in the player. Therefore, to avoid danger, never use a cracked or deformed disc or a disc repaired with tape or adhesive agent.

Note related to transportation and movement

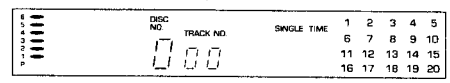
Before transporting or moving the CD PLAYER, carry out the following operations.

1. **Turn the power ON but do not load a disc or magazine.**
2. **Wait a few seconds and verify that the display shown appears.**
3. **Turn the power OFF.**

DP-97(M-97)



DP-M87(M-97M)



■ Memory backup function

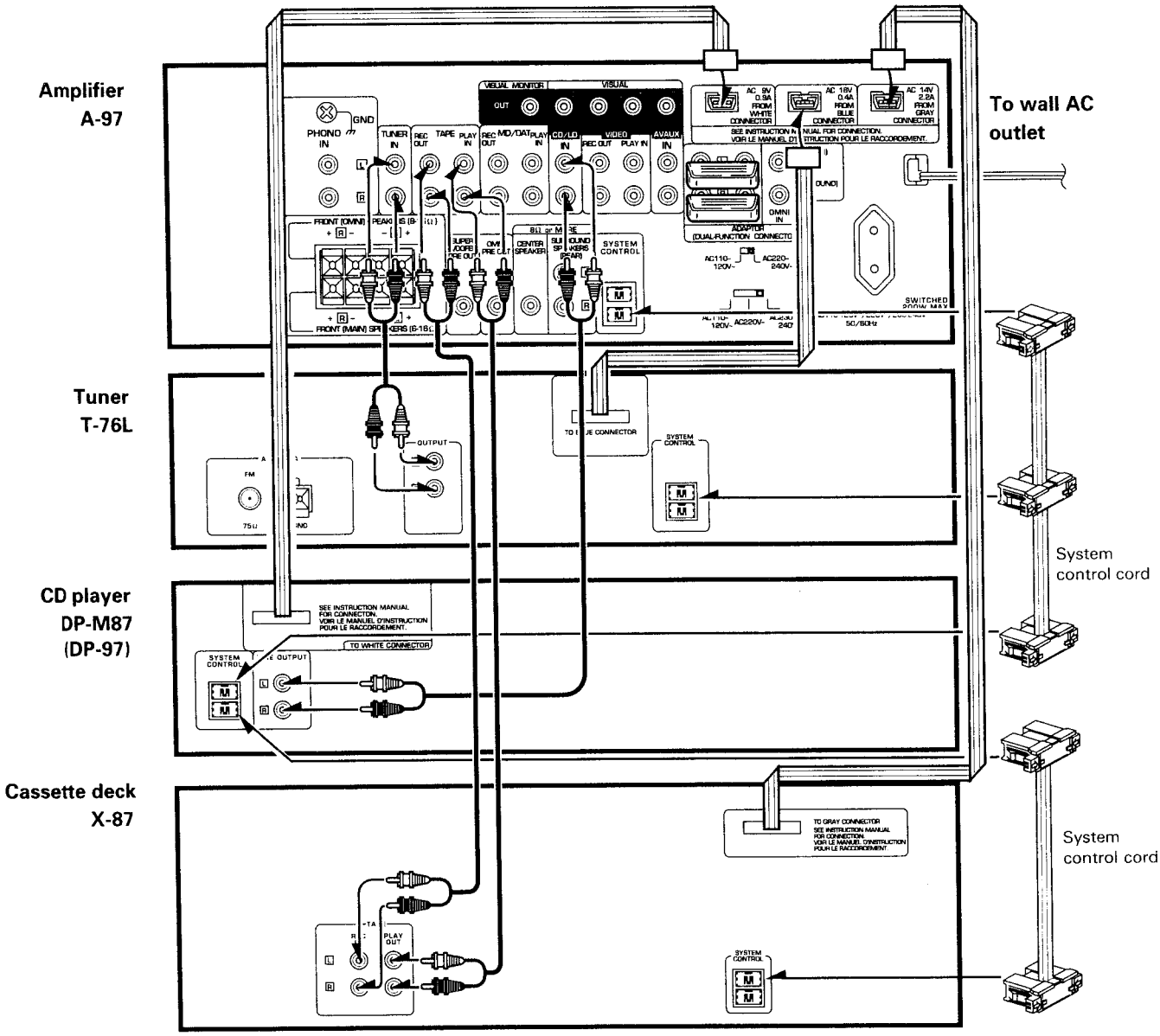
Stored contents cleared at least 3 days after the last power OFF (STAND BY mode)	➡ Cassette deck (Direction and recording level)
Stored contents cleared immediately when power plug is unplugged from power outlet.	➡ (Clock of) tuner
Stored contents cleared in at least 3 days after power plug is unplugged from power outlet.	➡ (Preset stations of) tuner

Dolby noise reduction and HX Pro headroom extension manufactured under license from Dolby Laboratories Licensing Corporation. HX Pro originated by Bang & Olufsen.
"DOLBY", the double-D symbol ⧈ and "HX PRO" are trademarks of Dolby Laboratories Licensing Corporation.

System connections

■ Basic system connections

Make connection as shown below. When connecting the related system components, refer also to the instruction manuals of the related components.
Do not plug in the power lead until all connections are complete.



Note:
This illustration shows the M-97M system. With the M-97 system, the CD player is the DP-97 and some part of the layout is different.

■ Precautions for connections

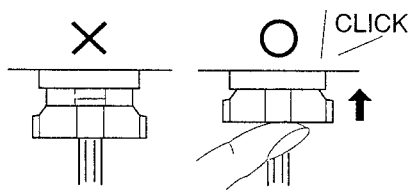
Basic precautions

1. Connect all cords firmly. If connections are loose there could be loss of sound or noise produced.
2. Do not connect up a power source which is larger than that indicated on the socket at the rear of the unit.
3. When stacking components, follow the indicated order in the connections diagram.
4. When plugging and unplugging connection cords after connections are complete, be sure to first remove the power cord from the AC outlet. Plugging/unplugging connection cords without removal of the power cord can cause malfunctions or damage to the unit.

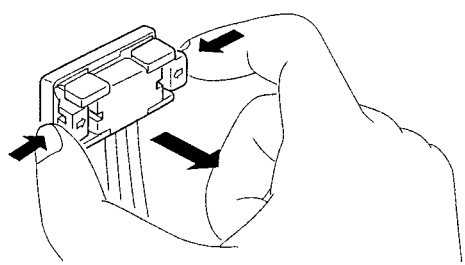
Connection of flat cord

(System control cord)

1. When plugging the connector:
Hold the connector in parallel with the socket on the rear panel, and insert securely until it clicks.



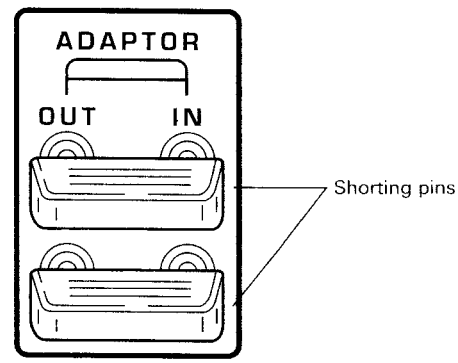
2. When unplugging the connector:
Push and hold the two ends of the connector and pull it straight from the rear panel socket.



3. Wire and connect the system control cord as indicated in the connection diagram.

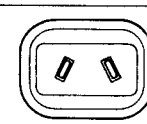
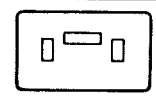
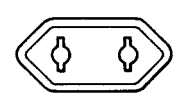
ADAPTOR jacks on the amplifier rear panel

When an adaptor-type component such as a graphic equalizer is connected, unplug the shorting pins from the ADAPTOR jacks and connect the component to these jacks.



- When the ADAPTOR jacks are not used, be sure to plug the shorting pins into the jacks. Otherwise, the sound will not be produced.
- When the ADAPTOR jacks are used, retain the shorting pins and be careful not to lose them.
- Never plug a shorting pin into other jacks than ADAPTOR jacks. Otherwise, the unit may be damaged.

AC outlets on the rear panel of the amplifier

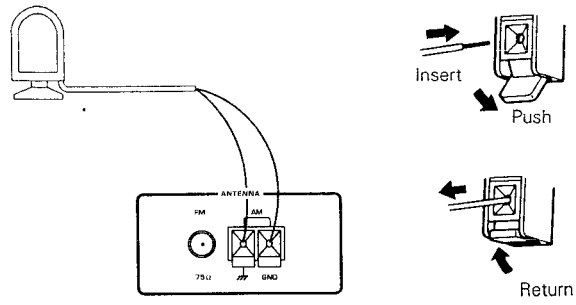
Unit destination	Shape of the AC outlet
For AUSTRALIA	
For U.K. *	
For Europe	
For other countries	

*** CAUTION (For U.K.)**
When using the AC outlets equipped with this unit, be sure to consult your dealer for the corresponding plug.

Connection of antennas

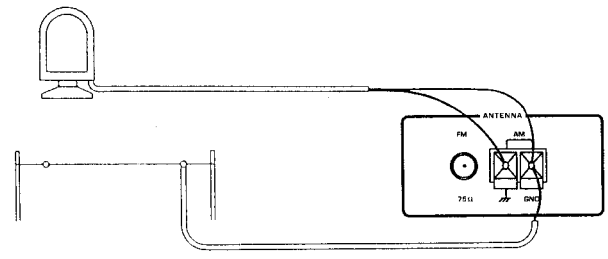
■ AM loop antenna connection

The supplied antenna is for indoor use. Place it as far as possible from the main system, TV set, speaker cords and power cord, and set it to a direction which provides the best reception.

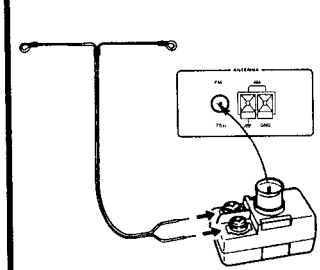


■ AM outdoor antenna connection

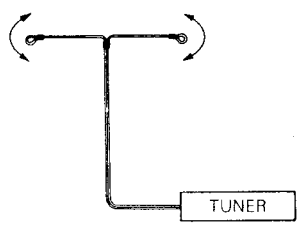
If the reception is poor when the AM loop antenna is used, distribute a vinyl-coated wire of more than 6 meters outdoors, without disconnecting the loop antenna.



■ FM indoor antenna connection

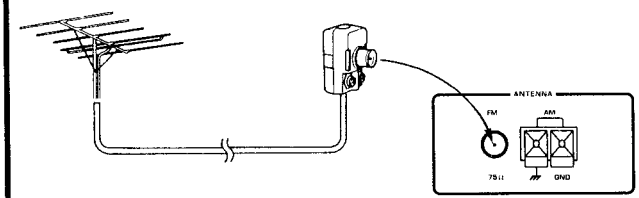


Connect to the screw terminals.



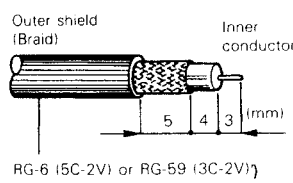
Find the position that provides best reception. Fix two ends.

■ FM outdoor antenna connection

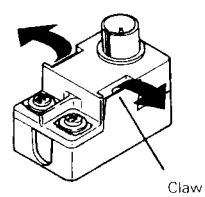


■ 75 Ω coaxial cable connection

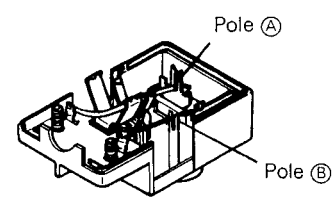
① Arrange the coaxial cable as illustrated.



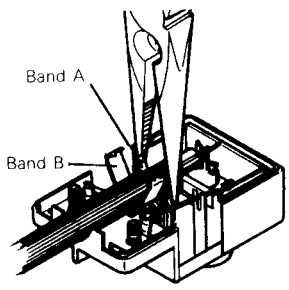
② Open the antenna adaptor. Open the claws with the fingers to release the lock and pull out the cover.



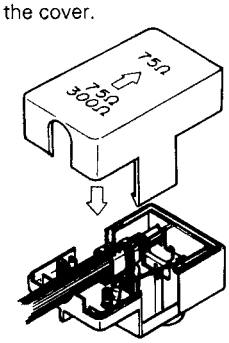
③ Remove the inner conductor from the groove of pole Ⓐ and insert it in the groove of pole Ⓑ



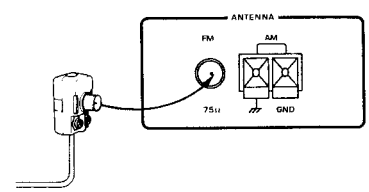
④ Insert into the slit on the clip. Fasten the bands A and B, using a pair of pliers.



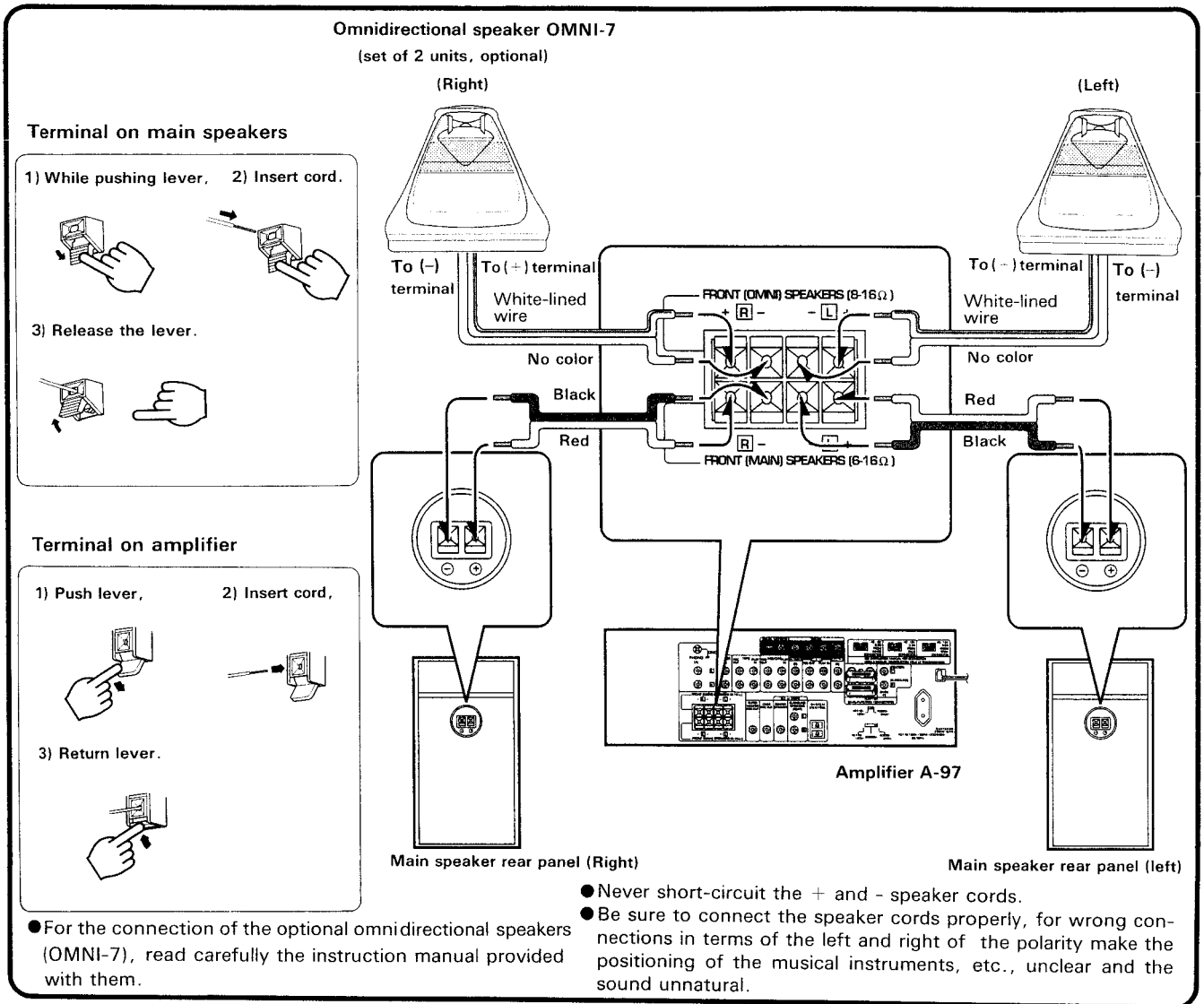
⑤ Close the cover.



⑥ Connect the adaptor to the antenna terminal.

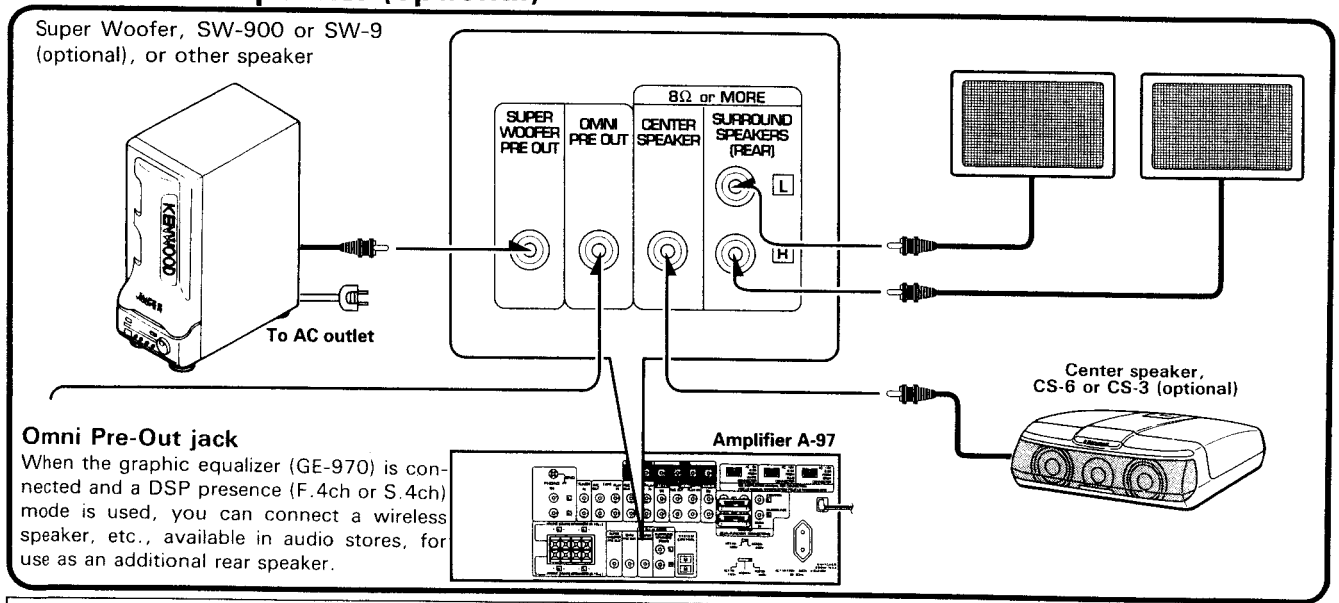


■ Connection of main speakers and omnidirectional speakers (optional)



- For the connection of the optional omnidirectional speakers (OMNI-7), read carefully the instruction manual provided with them.
- Never short-circuit the + and - speaker cords.
- Be sure to connect the speaker cords properly, for wrong connections in terms of the left and right of the polarity make the positioning of the musical instruments, etc., unclear and the sound unnatural.

■ Connections of super woofer (optional), surround (rear) speakers (optional) and center speaker (optional)

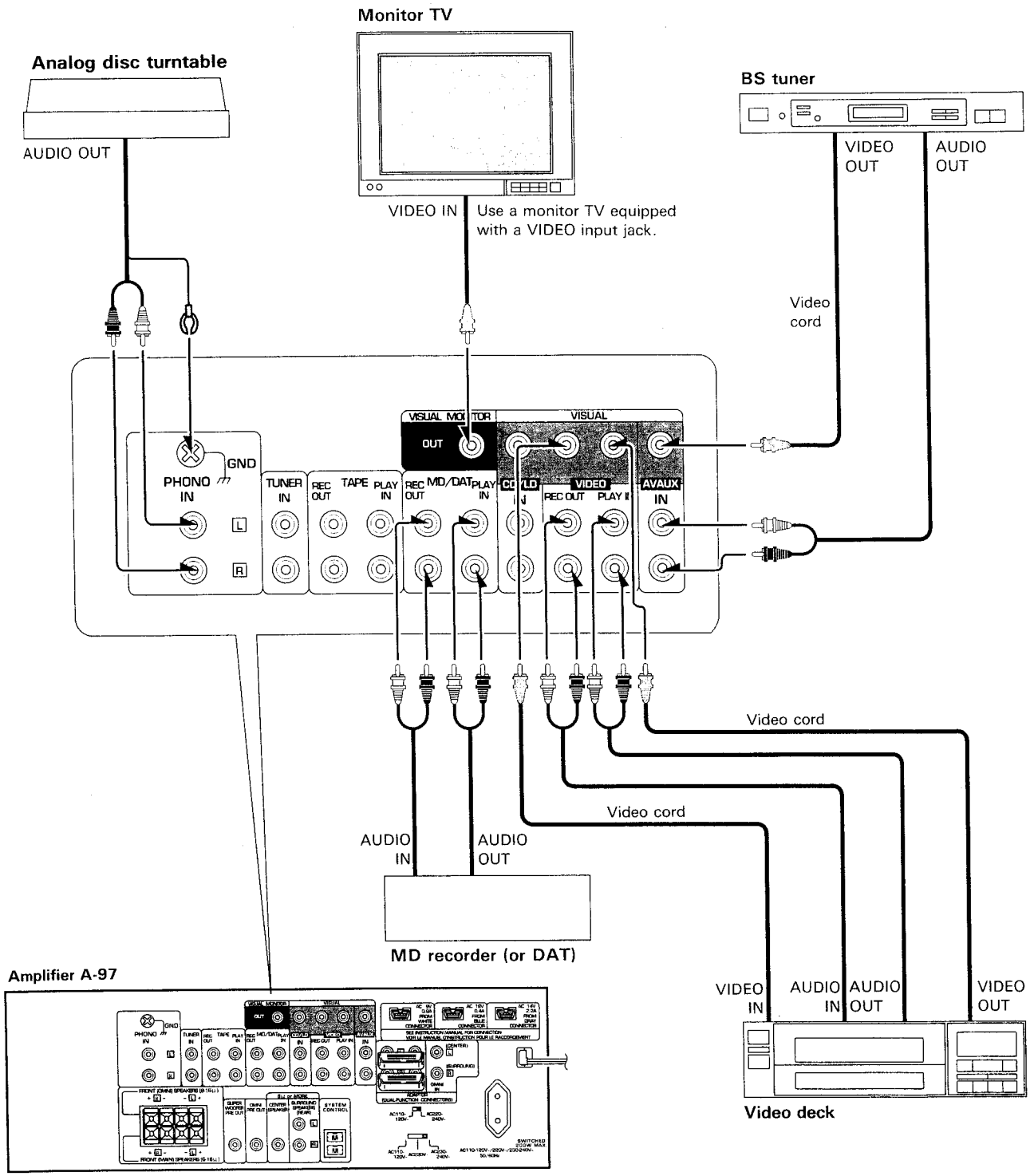


Omni Pre-Out jack
When the graphic equalizer (GE-970) is connected and a DSP presence (F.4ch or S.4ch) mode is used, you can connect a wireless speaker, etc., available in audio stores, for use as an additional rear speaker.

***IMPORTANT** This option may not be available in some areas. For details on options, consult your dealer.

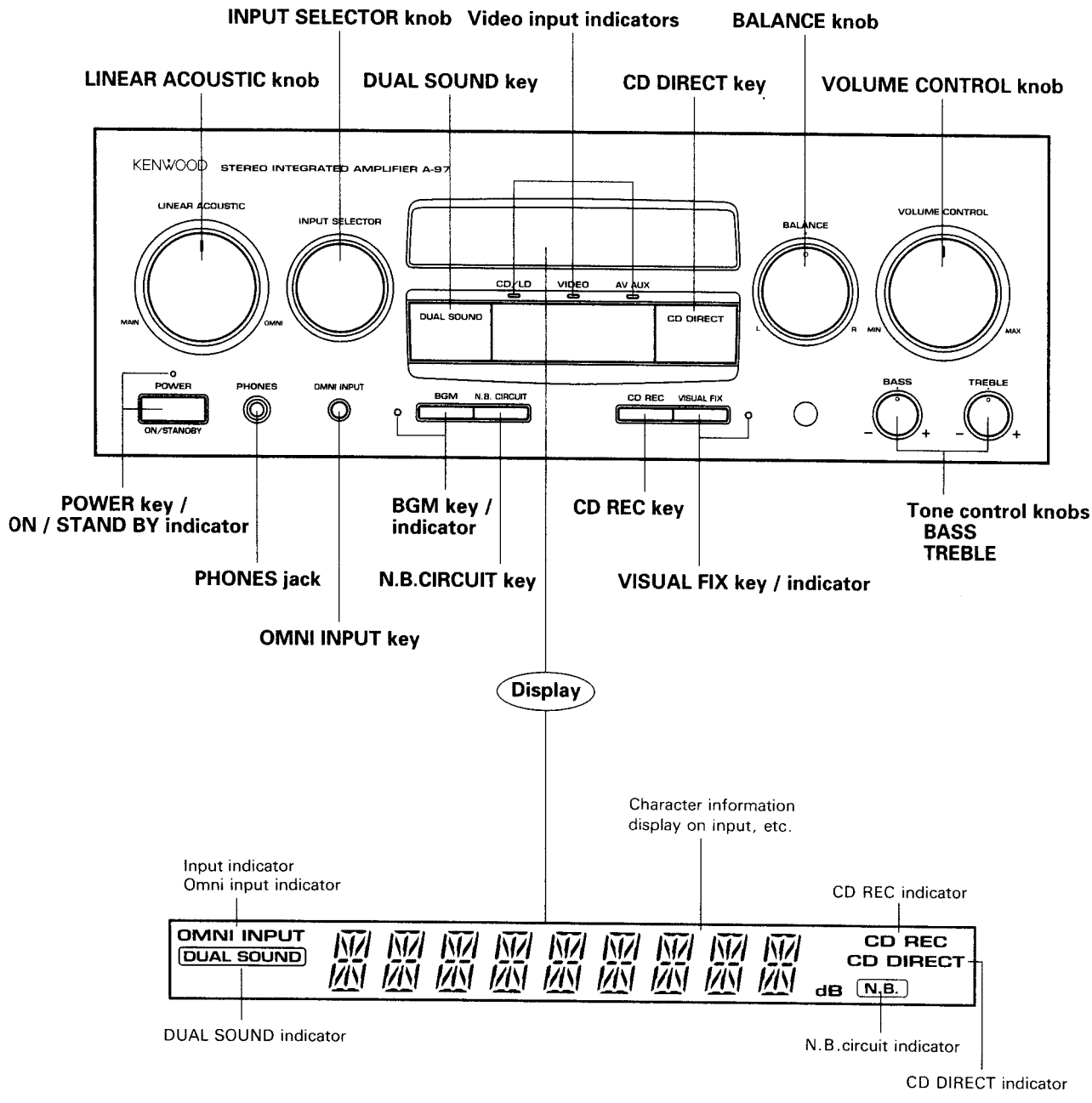
■ Connection with AV components (optional)

- The connection cords are not provided for this system.
- One of the following video components can be connected in place of the BS tuner.
  - LD player
  - Video camera (play only)
  - Video deck (play only)
- In place of the MD (Mini Disc) recorder, a DAT recorder, etc., can be connected.

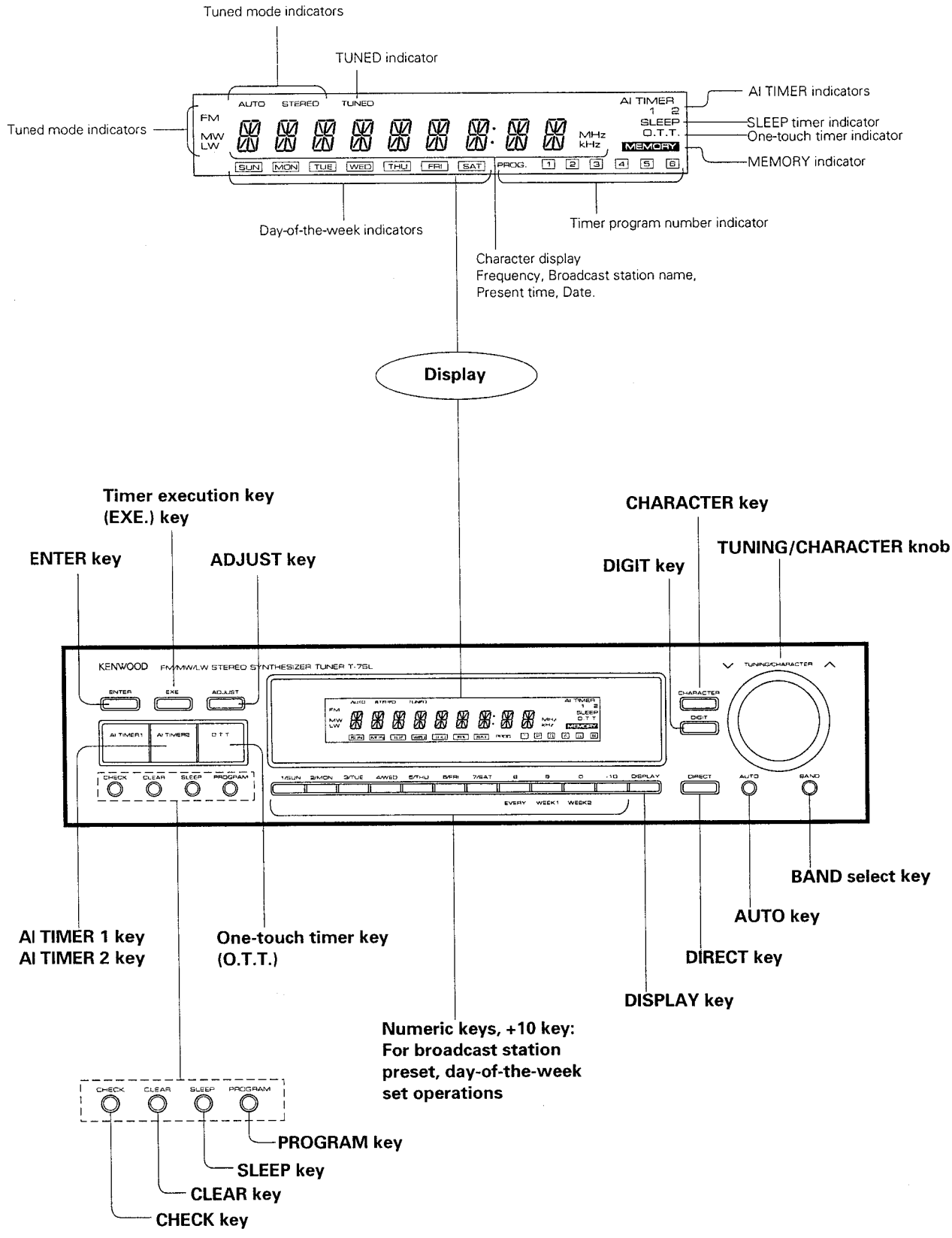


Controls and indicators

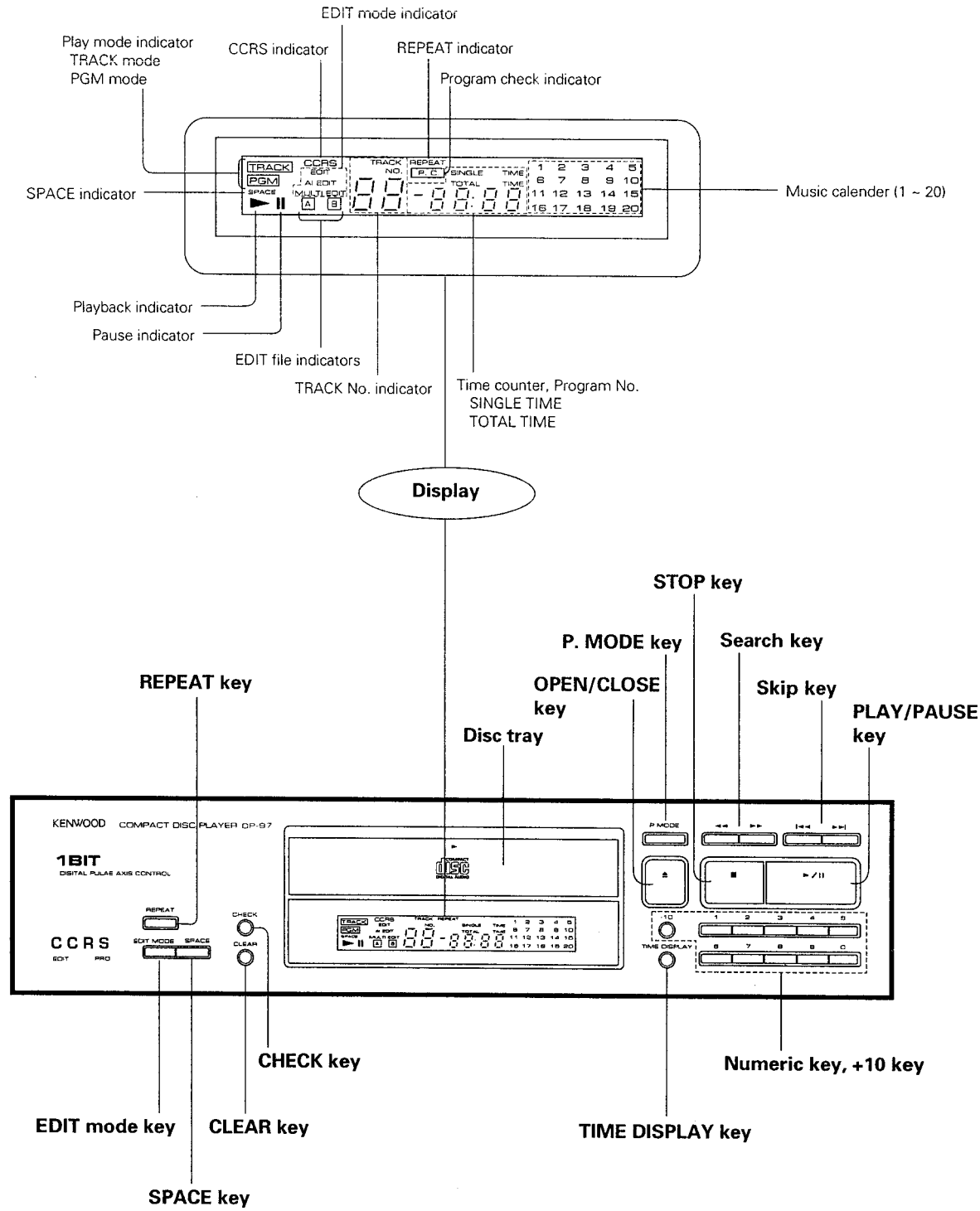
■ Amplifier A-97



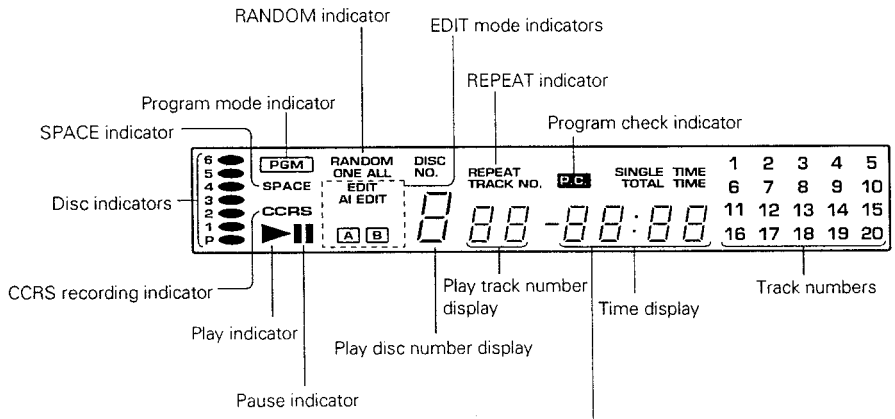
■ Tuner T-76L

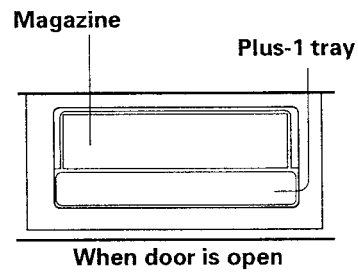

Tuned mode indicators
TUNED indicator
AUTO
STEREO
TUNED
AI TIMER
1 2
SLEEP
O.T.T.
MEMORY
FM
MW
LW
MHz
kHz
SUN
MON
TUE
WED
THU
FRI
SAT
PROG.
1 2 3 4 5 6
AI TIMER indicators
SLEEP timer indicator
One-touch timer indicator
MEMORY indicator
Tuned mode indicators
Day-of-the-week indicators
Timer program number indicator
Character display
Frequency, Broadcast station name,
Present time, Date.
Display
Timer execution key
(EXE.) key
ENTER key
ADJUST key
CHARACTER key
DIGIT key
TUNING/CHARACTER knob
KENWOOD FM/MW/LW STEREO SYNTHESIZER TUNER T-76L
ENTER
EXE
ADJUST
AI TIMER1
AI TIMER2
O.T.T.
CHECK
CLEAR
SLEEP
PROGRAM
CHARACTER
DIGIT
TUNING/CHARACTER
DISPLAY
DIRECT
AUTO
BAND
EVERY
WEEK1
WEEK2
BAND select key
AUTO key
DIRECT key
DISPLAY key
AI TIMER 1 key
AI TIMER 2 key
One-touch timer key
(O.T.T.)
Numeric keys, +10 key:
For broadcast station
preset, day-of-the-week
set operations
PROGRAM key
SLEEP key
CLEAR key
CHECK key

■ CD PLAYER DP-97 (For M-97 system)

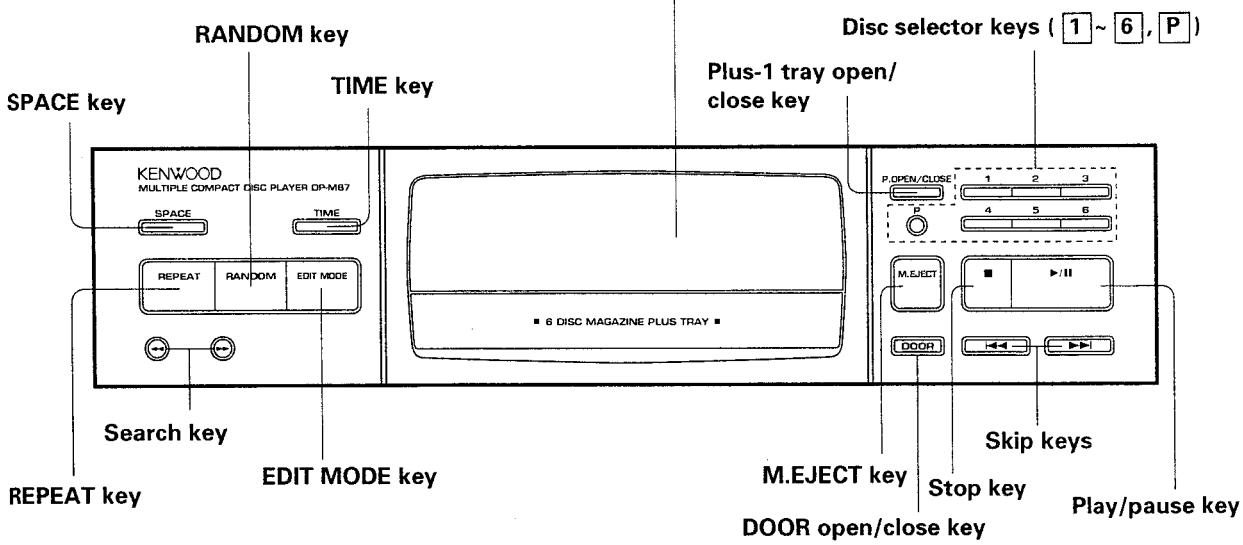


■ CD Player DP-M87 (For M-97M system)

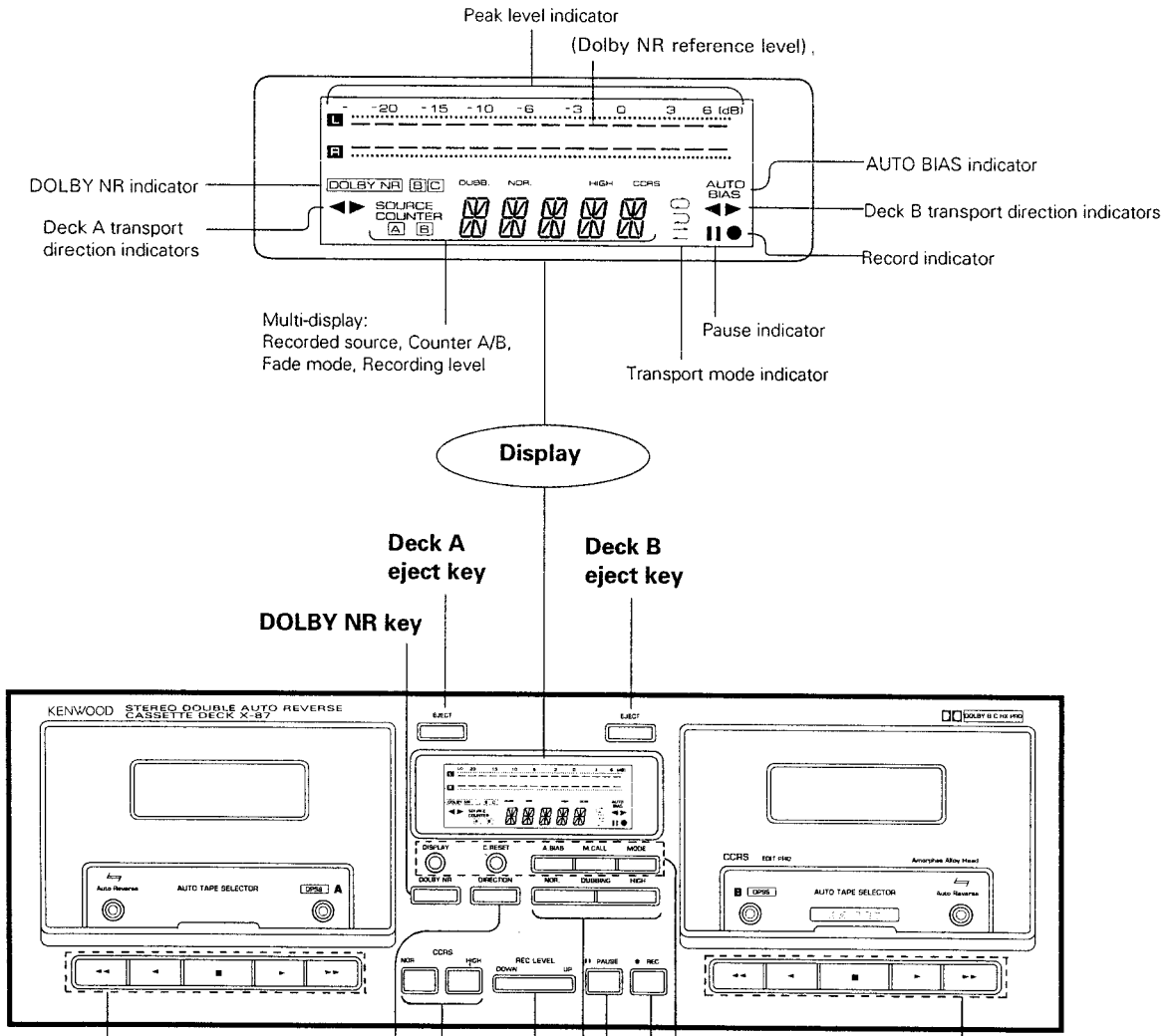




Display



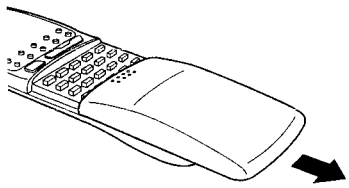
■ Cassette deck X-87



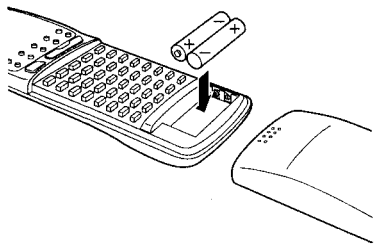
Operation of remote control unit

■ Loading batteries

1 **Remove the cover.**

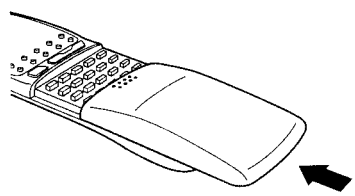


2 **Insert batteries.**



- Insert two AAA size (R03) batteries as indicated by the polarity marking.

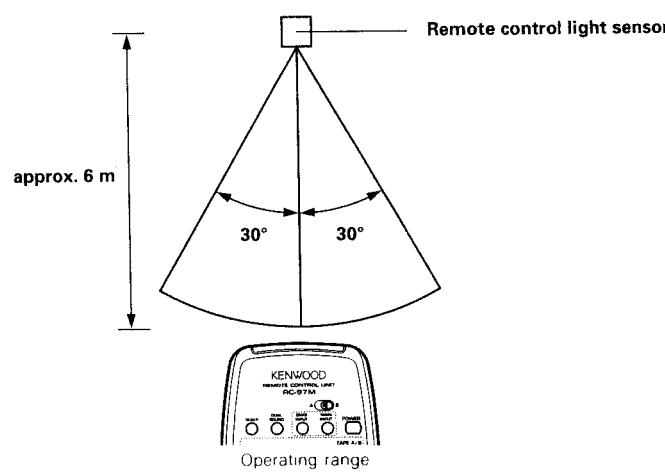
3 **Close the cover.**



For convenience in description, the illustration of the remote control unit shown on subsequent pages donot show the remote control unit cover.

■ Operation procedure

Plug the power cord of the system into an AC wall outlet, and press the POWER key on the remote control unit to turn the power on.
When the power is turned on, press the key of the source component to be operated.



Operating range

- When two operation keys on the remote control unit are pressed successively, press each key securely reserving an interval of more than 1 second for each press.

Notes:
1. The supplied batteries are intended for use in operation checks. Therefore, their lives may be shorter than ordinary batteries.
2. When the remote-controllable distance gets shorter than before, replace both batteries with new ones.
3. Malfunction may occur if direct sunlight or the light of a high-frequency lighting fluorescent lamp enters the remote control light sensor. In such a case, change the system installation position to prevent the malfunction.

A/B switch

Keys in the hashed section can be used in two ways. The two functions can be switched according to the purpose of each operation.

- Keys which have two names printed on or around them, one printed in white characters and the other in brown characters, provide the functions printed with brown characters when the A/B switch is set to A, and provide the functions printed with white characters when the switch is set to B.
- Other keys function regardless of the A/B switch position.

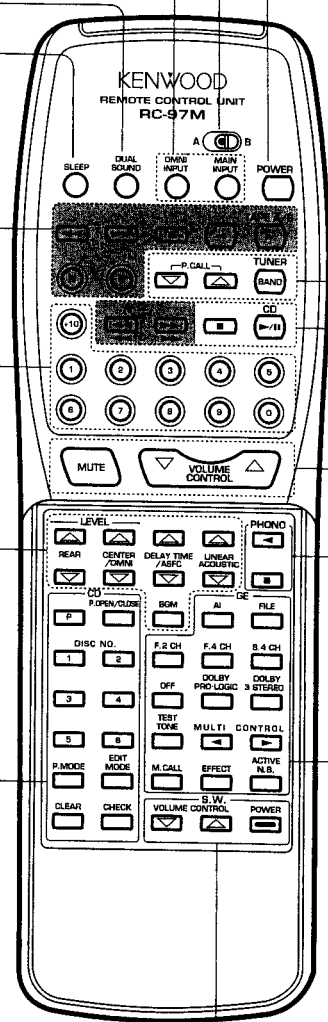
Input selector keys

MAIN INPUT key: Press to select the source component to be played.
OMNI INPUT key: Press to select the component to be played through the omni-directional speakers (optional) for dual sound play or in the DSP presence mode.

POWER key

DUAL SOUND key

SLEEP timer key



Cassette deck operation keys

To operate deck A, set the A/B switch to A. (The ● and ❚❚ keys are invalid in this case.)
To operate deck B, set the A/B switch to B.

Tuner operation keys

BAND key, P.CALL keys

CD player basic operation keys

⏮ and ⏭ keys, ■ key, ⏯ key
When the A/B switch is set to A: ⏮ and ⏭ keys

Numeric keys

Function as the numeric keys of the CD player when the CD input is selected.
Function as the numeric keys of the tuner when the TUNER input is selected.

VOLUME CONTROL keys

Press these keys to adjust the volume. When these keys are pressed, the VOLUME CONTROL knob on the main unit rotates and the indicator on it blinks at high speed.

MUTE key

Press to mute the sound temporarily.

Amplifer operation keys

LINEAR ACOUSTIC key, BGM key.
Surround function keys.
These keys are used when the graphic equalizer (optional GE-970) is connected, REAR LEVEL key, CENTER/OMNI LEVEL keys, DELAY TIME/ASFC keys.

Analog disc turntable operation keys

These keys are used to operate the analog disc turntables of KENWOOD (optional P-78, P-66).

CD operation keys

As the M-97M and M-97 use the same model of remote control unit, some of its keys cannot be used with the M-97.
Keys usable with the M-97M system:
All keys can be used.
Keys usable with the M-97 system:
P.MODE key, EDIT MODE key, CLEAR key, CHECK key.

Graphic equalizer (optional GE-970) operation keys

Keys related to graphic equalizing
AI key, FILE key, M.CALL key, EFFECT key, ACTIVE N.B. key
Keys related to surround and presence effects
F.2CH key, F.4CH key, S.4CH key, OFF key, DOLBY PRO LOGIC key, DOLBY 3 STEREO key, TEST TONE key, MULTI CONTROL key

Super woofer operation keys

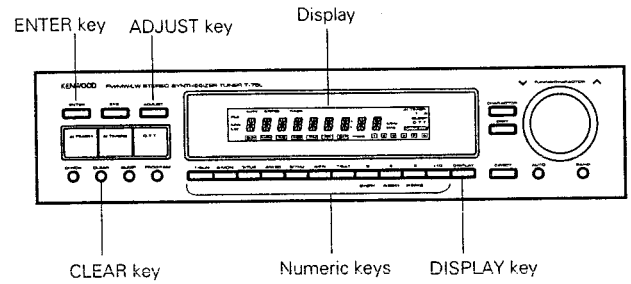
POWER key, VOLUME CONTROL keys
(Optional)

Model: RC-97M

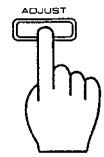
Infrared ray system

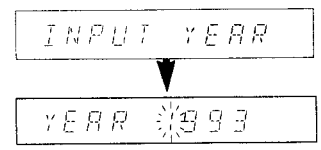
Time adjustment

The tuner incorporates the clock function. Adjust the clock to the exact time, especially when the program timer function is to be used.



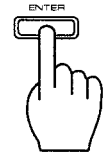
1 Press the ADJUST key.

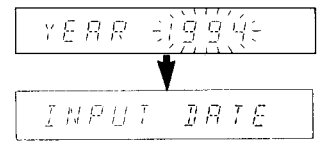




2 Input the year using the numeric keys, and press the ENTER key.

To input 1994: **press** [1], [9], [9], [4]. ➡



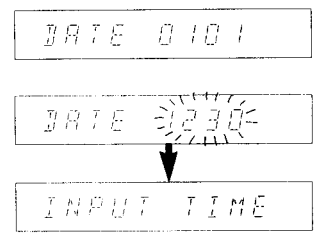


- If you commit a mistake in the input of numeric keys, press the [CLEAR] key, and re-start the input from the beginning.

3 Input the month then the day, and press the ENTER key.

To input March 7: **press** [0], [3], [0], [7].

To input December 30: **press** [1], [2], [3], [0].



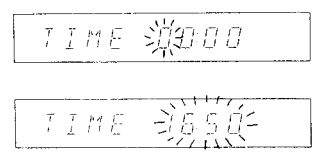
- If you commit a mistake in the input of numeric keys, press the [CLEAR] key, and re-start the input from the beginning.

4 Input the time of the day.

To input 9:05 AM: **press** [0], [9], [0], [5].

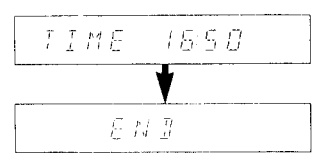
Use the 24-hour system.

To input 4:50 PM: **press** [1], [6], [5], [0].



- If you commit a mistake in the input of numeric keys, press the [CLEAR] key, and re-start the input from the beginning.

5 Press the ENTER key.



- For correct time adjustment, it is recommended to press the [ENTER] key at the same time as a time announcement.

Clock starts to work.

Note:
The time display blinks after a power failure or when the power cord was unplugged from the power outlet. In this case, adjust the time again.

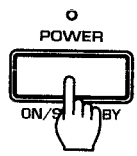
Displayed contents and DISPLAY key

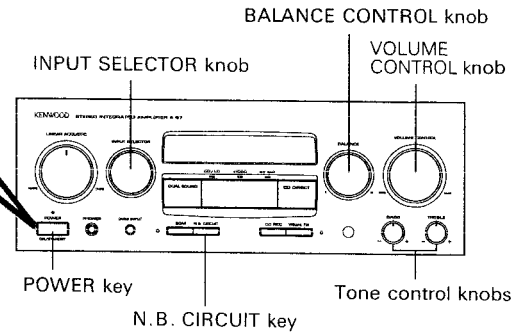
Every time the [DISPLAY] key is pressed while a radio station is received, the displayed content is switched from the frequency to the station name, present time, and date (month and day). When a key associated with tuning is pressed while the date or time is being displayed, it is switched to the frequency display, and returns to the previous content in a few seconds. When the [DISPLAY] key is pressed while the power is OFF, the displayed content is switched alternately between the date and time.

Sound adjustment procedures

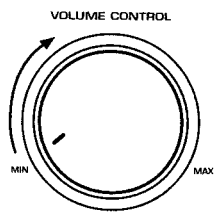
Press the POWER key of the amplifier.

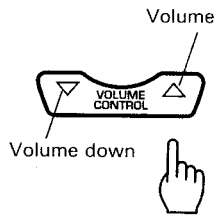
- The POWER key on the amplifier can switch on/off the powers of main system.





■ Adjusting the volume





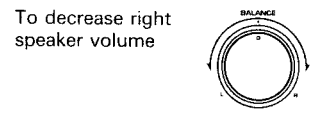
- When the volume is adjusted from the remote control unit, the point indicator on the VOLUME control blinks and rotates together with the control knob.

To mute sound temporarily

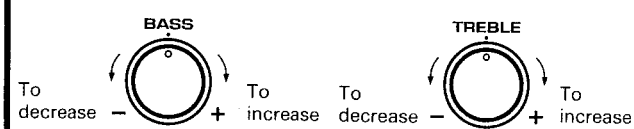
Remote control unit

- Pressing the key again resumes the previous volume.

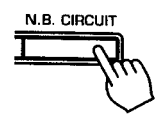
■ Adjusting the left and right volume balance



■ Adjusting the tone



■ Compensation of bass sound



N.B. CIRCUIT: Natural Bass Circuit

- The N.B. CIRCUIT effect switches on/off every time the key is pressed.
- Set to on to obtain a more natural bass sound.
- The N.B. CIRCUIT does not function when the PHONO input is selected.

STAND BY mode of POWER switch

When the power cord of this system is plugged into an AC outlet, the STAND BY indicator lights up regardless of the ON/OFF setting of the POWER switch. This indicates that a small amount of current is being supplied to the unit to back up the memory contents. This mode is referred to as the Stand By mode. While the STAND BY indicator is lighted, the power of the system can be switched ON/OFF from the remote control unit.

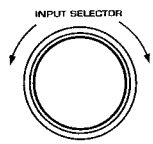
Automatic play operation function associated with input selector Knob of amplifier

The automatic play operation allows to start playing the selected input source by simply turning the input selector knob.
It also allows to select a correct input on the amplifier by simply starting playback on the desired input source component.
The input source selected at the moment the power is switched ON is the last source (TUNER, CD / LD, etc.) selected before switching the power OFF.

Note:
The automatic play operation does not function during dual sound play.

■ Input source switchover

Select the target input selector.



Example for turning clockwise:

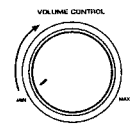
TUNER ⟷ PHONO ⟷ CD/LD ⟷ VIDEO
↕
TAPE B ⟷ TAPE A ⟷ MD/DAT ⟷ AV AUX

■ Listening through headphones

1 Insert the headphone plug into the headphone jack.

- The sound output from the omnidirectional speakers cannot be heard through headphones.

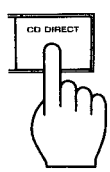
2 Adjust the volume.



■ Operation of CD DIRECT playback

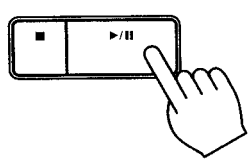
The digital sound of Compact Disc features an ideal reproduction characteristics, and the sound quality provided by CD can be reproduced with least degradation by means of the CD direct playback function.

1 Press the CD DIRECT key.



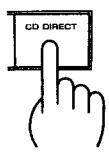
- The CD DIRECT indicator lights up.

2 Play the CD player.



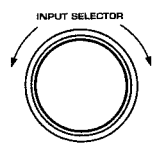
- The CD DIRECT selection is given priority to any other source being selected by the input selector.

To cancel the CD DIRECT playback function



Press CD DIRECT key again.

or

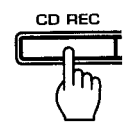


Select an input selector knob other than CD/LD

■ Operation of CD REC key

The CD REC key allows to listen to another music source while recording a CD.

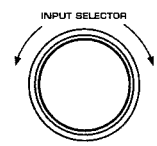
1 Press the CD REC key of the amplifier.



2 Start recording the CD.

- Refer to "Synchro recording of CD playback" and "Recording of CD playback (CCRS)".

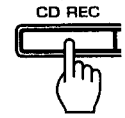
3 Select the music source to be listened to.

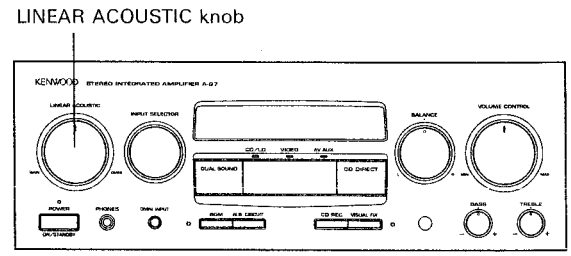


- Under this condition, the effect of the graphic equalizer (optional GE-970) is not applied.

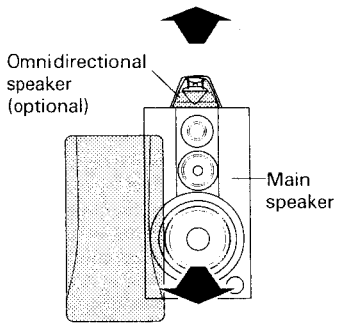
To cancel CD REC operation

Press the key again.



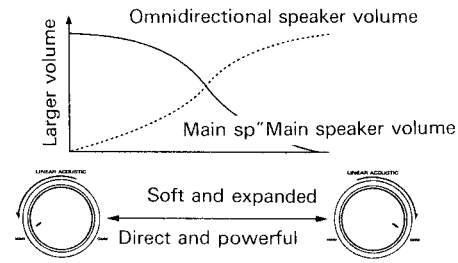


■ Adjuting the volume balance between main and omnidirectional speakers



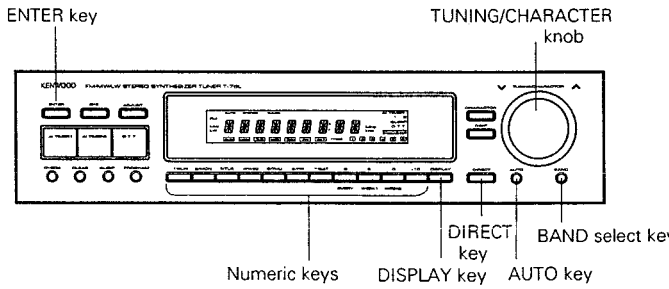
The volume balance between the main and omnidirectional speakers (optional) can be varied as required. This allows to enjoy a variety of sound in accordance with thg ambience of the played music or your personal mood.

- Turning the LINEAR ACOUSTIC control fully to one side allows to reproduce the sound only through the main or omnidirectional speakers.



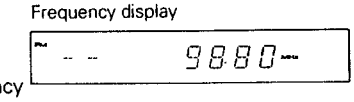
Operation of tuner

■ Receiving broadcast stations and storing them in memory (preset operation)



1 Display the frequency display.

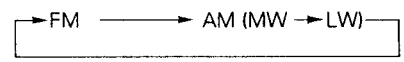
Frequency display



- Every time the DISPLAY key is pressed, the displayed contents are switched in order of Frequency → Broadcast station name → Present time → Date (month & day).

2 Select the broadcast band.

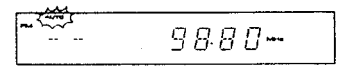
The bands are switched as follows every time the BAND key is pressed.



- The frequency is displayed for a few seconds when a key associated with tuning is pressed.

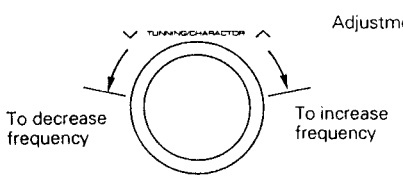
3 Select the tuning mode.

AUTO lights up.



- Press the key to select the auto (AUTO lighted) or manual (not lighted) mode. Normally, select the auto mode (with AUTO lighted).

4 Tune the desired station.

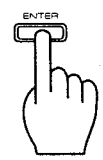


Auto tuning mode	Manual tuning mode
Turn the knob once. (Tuning stops automatically when a station is received.)	Turn the knob, until the desired station is received.

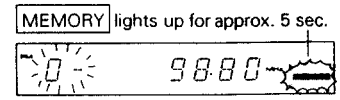
- The TUNED indicator lights up when a station is received.
- Use manual tuning mode when the radio wave is weak and noisy.
  With manual tuning, FM broadcasts in stereo are always received in monaural mode.

5 Store the station in preset memory.

① Press the ENTER key.

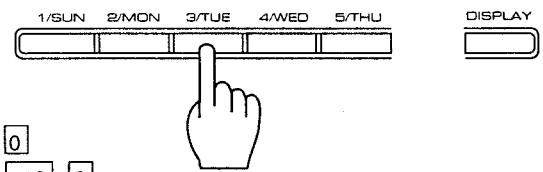


MEMORY lights up for approx. 5 sec.



- Up to 30 stations can be stored in memory irrespective of broadcast band.
- Proceed the steps ② while the MEMORY indicator is lighted.

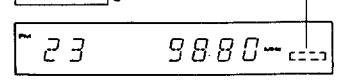
② Press the numeric key.



Example

When preset to preset 3 ..... [3]
When preset to preset 10 ..... [+10], [0]
When preset to preset 23 ..... [+10], [+10], [3]

MEMORY goes off.

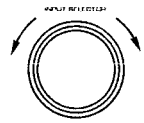


- When a station has previously been preset under the numeric key pressed, the newly preset station replaces the previous station.
- When preset is to be continued, repeat steps 2 to 5.

■ Receiving a preset station

1 Set to Tuner.

Select with the input selector knob.

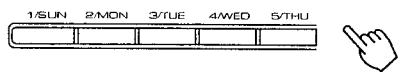


2 Selected the desired station.

Press the numeric key under which the station is preset.

Example

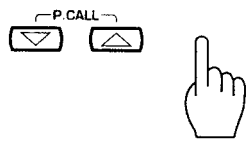
When receiving preset 29 ... [+10], [+10], [9]



● The frequency of the station received will be displayed.

■ Listening to all preset stations in sequence (P.CALL)

Press the [P.CALL] key.



Remote control unit

● With the key on the remote control unit, preset stations are received in order of 1 → 2 ... 10 ... 20 ... every time the ▽ key is pressed, or in order of 30 → 29 ... 20 ... 10 ... every time the △ key is pressed.

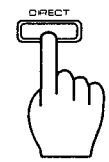
■ Direct tuning of radio station

If you know the frequency of the desired station, it can be received directly by inputting the frequency using the numeric keys.

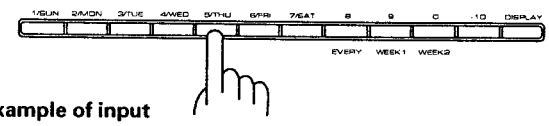
1 Select the broadcast band.

● One of FM or AM (MW/LW).

2 Press the [DIRECT] key.



3 Input the frequency of the desired station by pressing the numeric keys.



Example of input

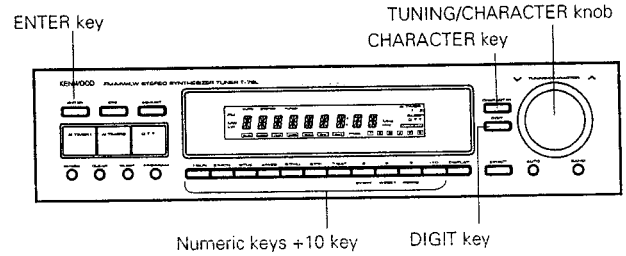
This can also be done with remote control numeric keys.

Desired station	Order of pressing numeric keys	
FM 90 MHz	[9], [0], [0]	(100 kHz space)
	[9], [0], [0], [0]	(50 kHz space)
FM 102.5 MHz	[1], [0], [2], [5]	(100 kHz space)
	[1], [0], [2], [5], [0]	(50 kHz space)
AM (MW) 810 kHz	[8], [1]	(10 kHz space)
	[8], [1], [0]	(9 kHz space)
AM (MW) 1260 kHz	[1], [2], [6]	(10 kHz space)
	[1], [2], [6], [0]	(9 kHz space)

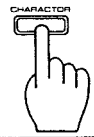
● If you commit a mistake in the input of numeric keys, press the [CLEAR] key, and re-start the input from the beginning.

■ Display station names

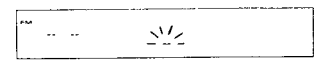
Station names composed of up four digits of characters and/or symbols can be displayed on the tuner display.
Example: To receive FM 93.4 MHz, input its name with characters "CBE", and preset them under numeric key [3].



1 Receive FM 93.4 MHz, and enter the character input mode.

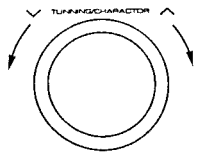


Blinks.



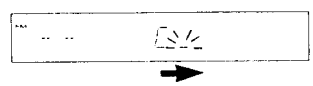
2 Select the characters to be displayed with that station.

① **Display the desired character.**



② **Establish the selection.**

Blinking digit changes to the next digit.



③ **Repeat steps ① and ② until all of the required characters have been input.**

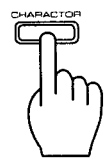
- To insert a space, simply press the [DIGIT] key.

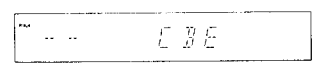
Types of characters that can be input

After having pressed the [CHARACTER] key, turn the TUNING/CHARACTER knob to display the characters available.

A B C D .... X Y Z 0 1 2 ...
└Blank position (Blank space)
/ * - + 9 8 7 ...

3 End the character input.



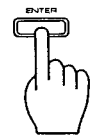


- The character input also terminates automatically when fourth character has been input.
- Turn the [CHARACTER] key to terminate character input with three characters or less.

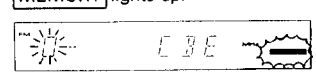
In case you commit an input mistake, press the [CLEAR] key and re-start from the first digit.

4 Preset them under key [3].

① **Press the [ENTER] key.**

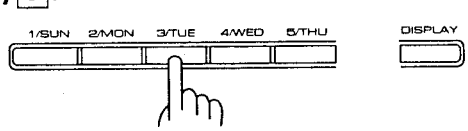


[MEMORY] lights up.

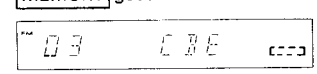


- Proceed to step ② while the [MEMORY] indicator is lighted.

② **Press numeric key [3].**



[MEMORY] goes off.

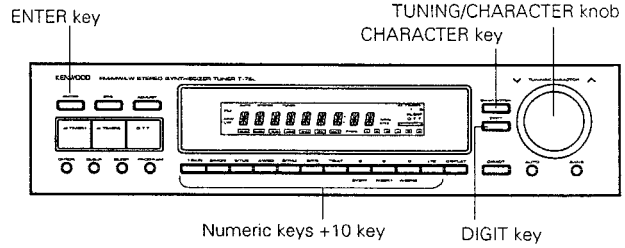


(End of preset)

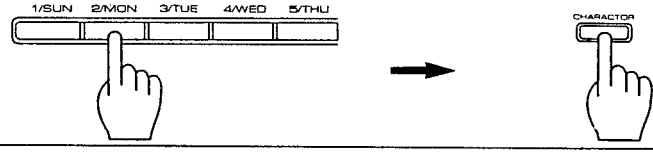
Last channel memory
When the tuner's band selector is switched or when the amplifier's input selector is switched from another source to TUNER, the last received station is recalled for each of FM, AM (MW, LW) when the amp power is switched ON.

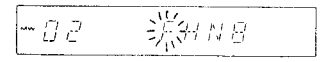
■ Changing a station name

Example: To change station name "FHN8" preset with AM (MW) 810 kHz frequency under key [2] to "FEN".



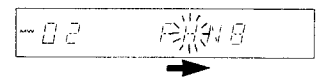
1 Receive preset station of [2] by preset tuning, and enter the character input stand-by mode.



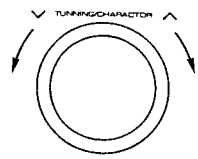


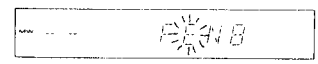
2 Move the blinking digit to the second digit.

Blinking digit change to the next digit.



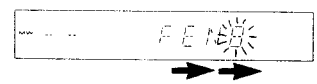
3 Select "E" with the [TUNING/CHARACTER] knob.



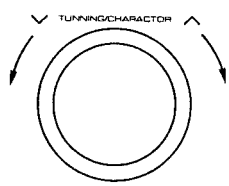


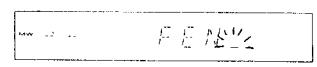
4 Move the blinking digit by two digits.

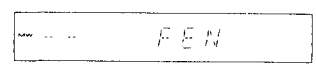
Press twice.



5 Select the blank with the [TUNING/CHARACTER] knob.



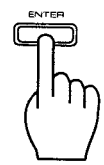




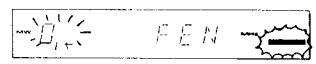
- The character input terminates automatically when fourth character has been input.

6 Preset the new name under numeric key [2].

① **Press the [ENTER] key.**

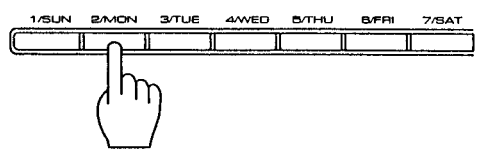


[MEMORY] lights up.

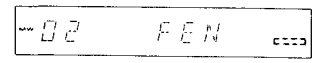


- Proceed to step ② while the [MEMORY] indicator is lighted.

② **Press numeric key [2].**



[MEMORY] goes off.



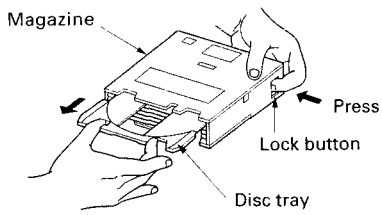
(End of change)

Playback operation of CD player (For the M-97M system)

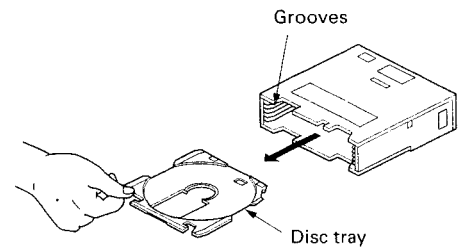
■ Loading a disc into the magazine

1 Pull out the disc tray.

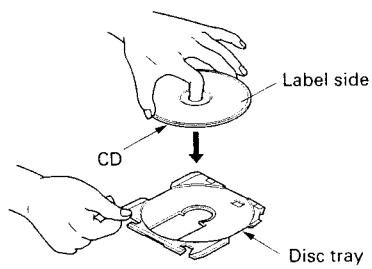
① **While pressing in on the lock button**



② **Pull out the disc tray.**

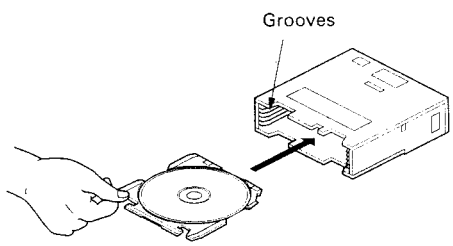


2 Place a disc on the disc tray.

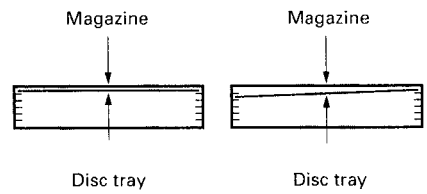


- Commercially-available CD single (8 cm) disc adapters cannot be used in this system. To play CD single (8 cm) discs, use the optional CDM-608 CD single magazine.

3 Insert the disc tray into the magazine.



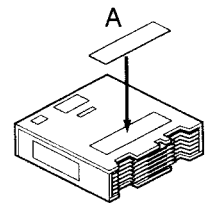
Align the tray with the corresponding left and right grooves and insert horizontally into the magazine.



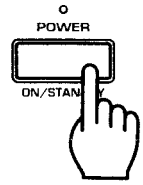
- Be sure to place each disc on a disc tray before inserting into the magazine.
- Even when loading fewer than six discs, make sure there are six disc trays inserted in the magazine during use.
- Always hold the magazine level when carrying.

How to Use Labels

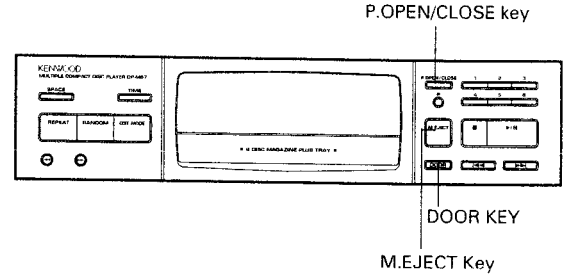
Be sure to put the labels in the designated place. Placement of the label or tape in the wrong place may cause a malfunction.



Labeling example:
A: Title of magazine

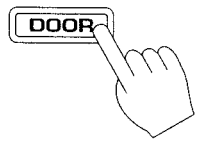


Be sure to turn on the amplifier before performing the following operations.



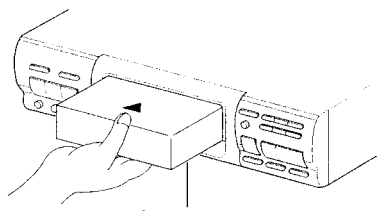
■ Loading a magazine

1 Open the door.

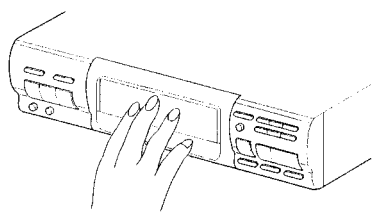


2 Insert the magazine.

①

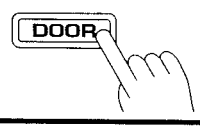


② Magazine



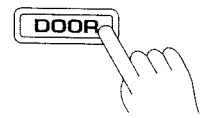
Press in until it locks in place with a click.

3 Close the door.



■ Removing a magazine

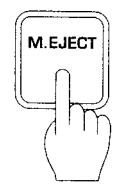
1 Open the door.

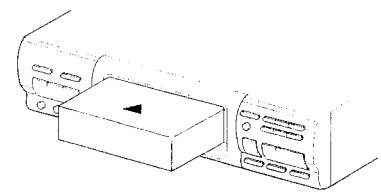


- By pressing the eject key, the door can also be opened and the magazine ejected.

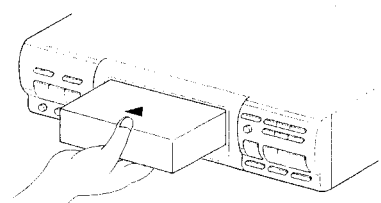
2 Remove the magazine.

① **Press the eject key.**



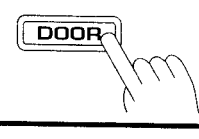


② **Pull out the magazine.**



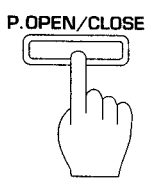
Hold the magazine in the center.

3 Close the door.



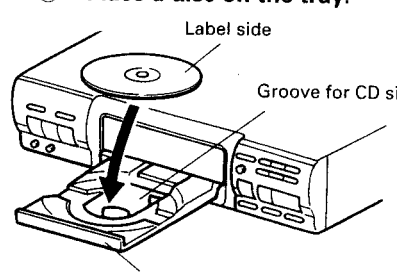
■ Loading a disc in the plus-1 disc tray

① **Open the plus-1 disc tray.**

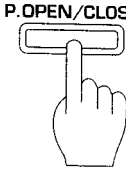


- The door opens and the plus-1 tray comes out.

② **Place a disc on the tray.**

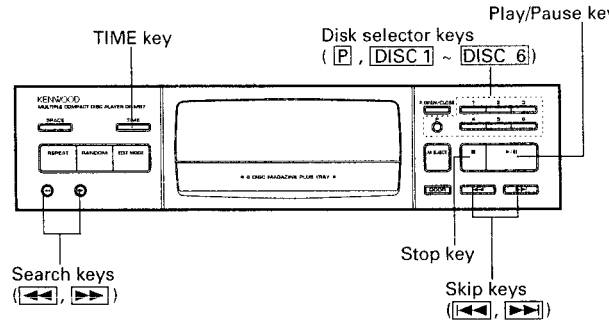


③ **Close the plus-1 disc tray.**



- The plus-1 tray retracts into the unit and the door closes.

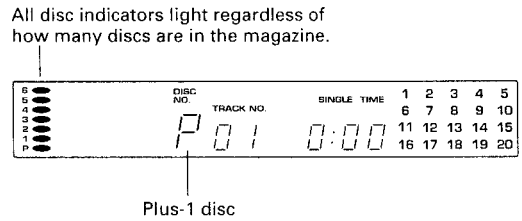
Note:
Load a disc on the tray according to the guide properly. Placing a disc slantwise on the tray causes malfunction.



■ Playing a CD from the beginning

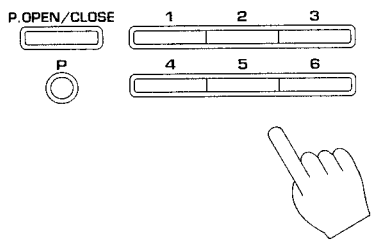
1 Place a disc in the magazine or on the plus-1 disc tray.

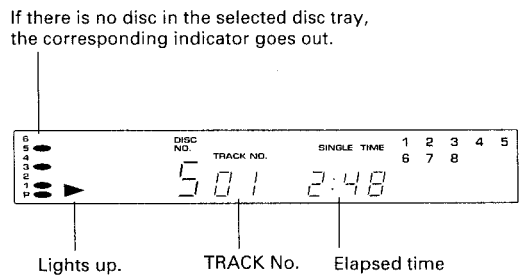
(Refer to pages 28, 29.)


All disc indicators light regardless of how many discs are in the magazine.
DISC NO.
TRACK NO.
SINGLE TIME
P 0 1
0:00
1 2 3 4 5
6 7 8 9 10
11 12 13 14 15
16 17 18 19 20
Plus-1 disc

2 Start playback.

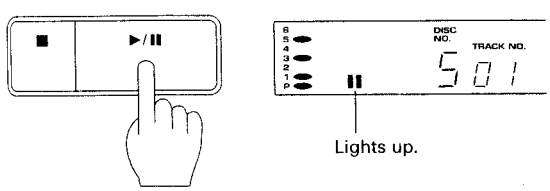
Select the desired disc.





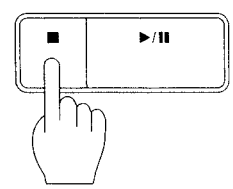
- Playback starts from the selected disc. If two or more discs are loaded, the discs are played in order of their disc numbers.
- If the play ►/II key is pressed without selecting a disc, the discs will be played automatically in the following order: P → 1 → 2 → 3 → 4 → 5 → 6. (P: Plus-1 disc tray)
- To play a single disc only, remove the magazine and place a disc only in the plus-1 disc tray.

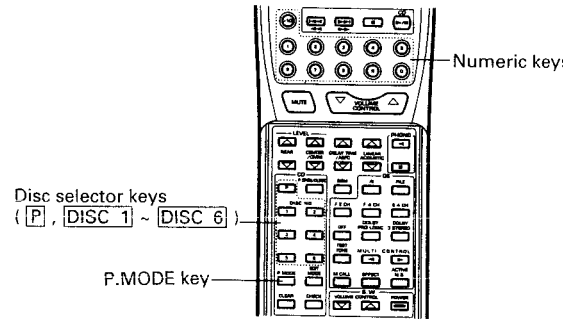
To pause playback



To resume playback, press the ►/II key again.

To stop playback

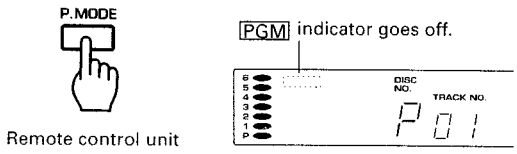




■ Listening from the desired track

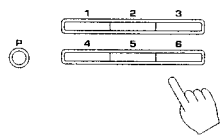
Preparation : Select CD/LD with the input selector knob of the amplifier unit.

1 Make sure the PGM indicator is extinguished.



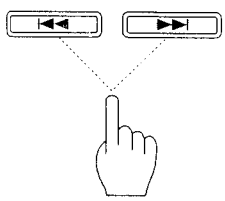
- If the PGM indicator is lighted, press the P.MODE key.

2 Select the desired disc.



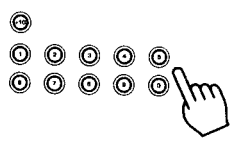
3 Select the desired track.

Main unit



Continue pressing unit the desired track No. appears.

Remote control unit

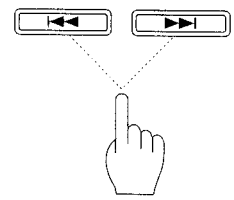


Examples of input

Track No.11: +10 1
Track No.20: +10 +10 0
Track No.30: +10 +10 +10 0

- Play starts from the selected tune and after.

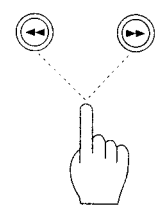
To skip tracks



- The tunes are skipped in the direction of the key and the play starts at the beginning of the selected tune.
- When the ⏮ key is pressed once during play, the track starts again from the beginning. (If pressed again, the play position returns to the preceding track.)

To fast forward and backward

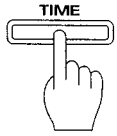
Fast-reverse Fast-forward



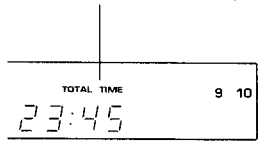
- The track will start to play from where you release the key.

TIME key

Press the TIME key when you want to check the elapsed time and remaining time of the track being played. Every time the TIME key is pressed, the displayed time changes as shown below.
The time information display may not appear when playing a CD containing 21 or more tracks. In such a case, the display (remaining SINGLE TIME) will show "– – –:– –".



SINGLE/TOTAL TIME display



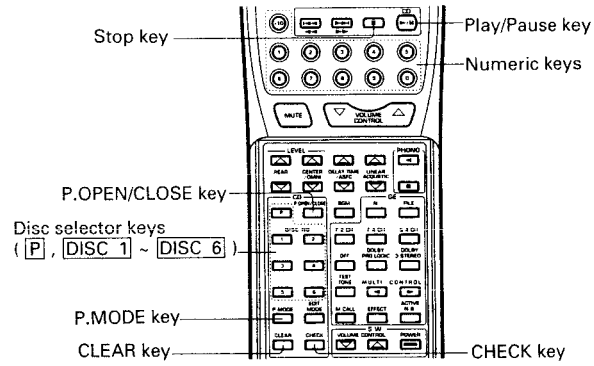
(In PGM or random mode, only the SINGLE TIME displays can be selected.)

SINGLE TIME	SINGLE TIME	TOTAL TIME	TOTAL TIME
Elapsed time of the track being played	Remaining time of the track being played	Elapsed time of the whole CD	Remaining time of the whole CD

Time display examples ..... 1:23 –2:37 23:45 –36:15

The program mode allows you to play desired tracks of 7 discs in the order you want to listen to. A maximum of 32 selections can be entered in memory.

Preparation : Select CD/LD with input selector knob of the amplifier unit.

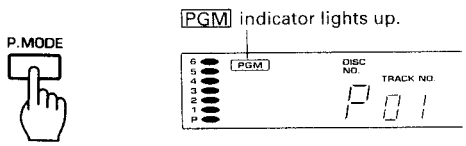


■ Playing desired tracks in desired order (PGM mode)

Remote control unit only

1 Enter the PGM mode.

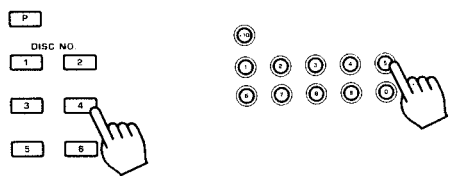
Press the P.MODE key.



2 Program desired tracks in desired order.

Example
To select track no.5 on disc 4:

① Select the disc. **② Select the track.**



- Repeat steps ① and ② to program up to 32 tracks. After 33 or more tracks are selected, "FULL" is displayed.

To program all tracks on a disc:
Omit step 2-②.

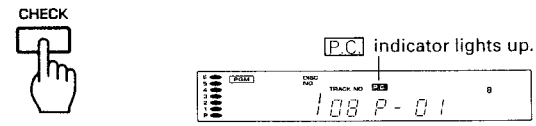
- If more than eight seconds elapse before proceeding to step 2-②, all tracks on the selected disc will be programmed.

If you make a mistake during entry:
Press the CLEAR key and re-enter the correct number.

3 Start playback.

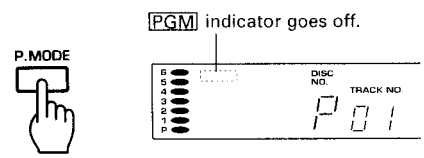
- Tracks are played in the order they are programmed (P-No.).
- If one of the skip keys (▶▶| or |◀◀) is pressed during programmed playback, the track being played is skipped in the forward or reverse direction.

To check the programmed order



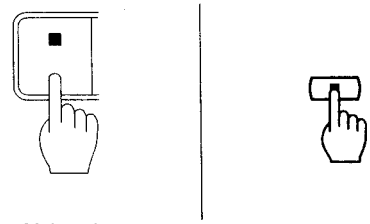
- Every time the CHECK key is pressed, the track No., DISC No. and the order it was programmed (P-No.) are displayed in the order of programming.
- The previous display will resume in a few seconds.

To resume normal playback



- The playback in the order of the track Nos. on CD will start after the track being played.

To stop programmed playback



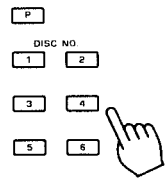
Note:
If the magazine does not contain a disc corresponding to the disc No. selected in step 2-①, the disc and track are programmed but cancelled at the time of playback.

■ To add a track to the program

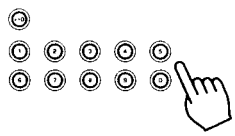
Remote control unit only

Select the track No. to be added.

① **Select the disc.**



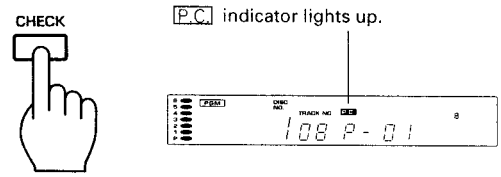
② **Select the track number.**



■ To change a track in the program

Remote control unit only

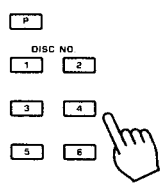
1 **Press the CHECK key.**



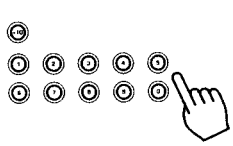
Press until the P-No. to be changed is displayed.

2 **Select the track No. to replace the previous one.**

① **Select the disc.**



② **Select the track number.**



Press while the P.C. indicator is lighted.

- The track being played cannot be changed.

■ To clear tracks from the program

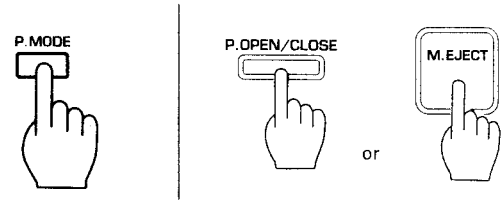
Remote control unit only

Clearing from the last track

- Every time the key is pressed, tracks are cleared from the last track in order.
- The currently playing track cannot be deleted.

Clearing the whole of program

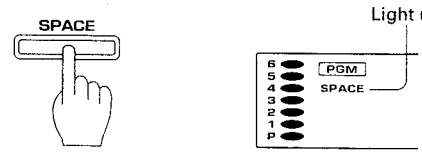
Press any one of these keys.



Remote control unit　　Main unit

Auto-Space function

During playback in the program mode, when the SPACE key is pressed, a space of about 4 seconds is reserved automatically between the programmed tracks. This function is provided to facilitate the DPSS function of the cassette deck. However, such a space could also be reserved in case the sound of two tracks are continued, for example with some classic music and live recordings.



- To cancel Auto-Space function, press the SPACE key again.

■ Repeated playback

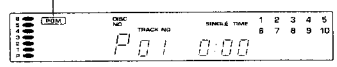
Preparation : Select CD/LD with the input selector knob of the amplifier unit.

Remote control unit only

Repeated playback of programmed tracks

1 Enter the PGM mode.

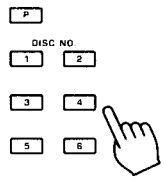
PGM indicator lights up.



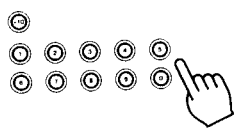
2 Select the desired track(s).

(Refer to page 31.)

① **Select the desired disc.**



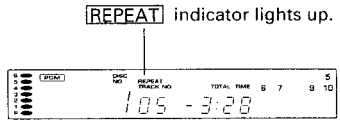
② **Select the desired tracks.**



- When you want to repeat only one track, go to step 3 below.
- Repeat steps ① and ② to program up to 32 tracks.

3 Press the REPEAT key.

REPEAT indicator lights up.



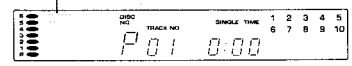
4 Start playback.

- All of the selected tracks will be played repeatedly.
- If only one track is selected, that track will be played repeatedly.

Repeated playback of the whole CDs

1 Make sure the PGM indicator is extinguished.

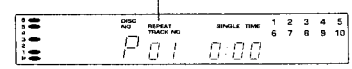
PGM indicator goes off.



- If the PGM indicator is lighted, press the P.MODE key.

2 Press the REPEAT key.

REPEAT indicator lights up.



3 Start playback.

- All tracks on all discs in the magazine and Plus 1 tray will be played repeatedly.

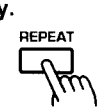
Repeating the Plus 1 Tray action only.

① **Enter the PGM mode.**

② **Select the Plus 1 Tray.**

- Wait 8 seconds.

③ **Press the REPEAT key.**



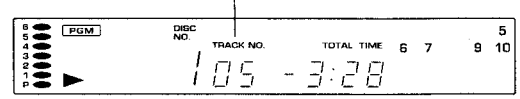
④ **Start playback.**

- All the tracks of the disc inside the Plus 1 tray will playback repeatedly.

To resume normal playback

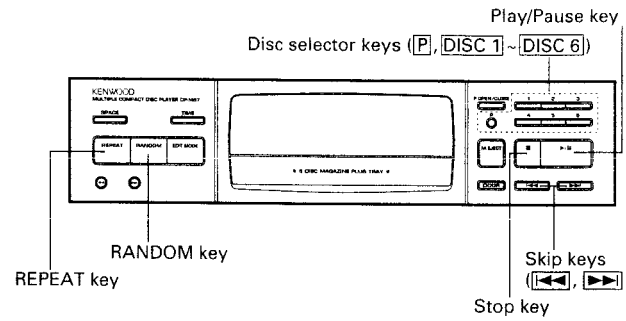
Press the REPEAT key again.

REPEAT indicator goes off.



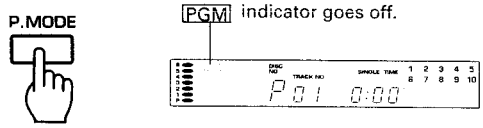
- The playback will be resumed under the CD player mode set before the repeat.

This function allows for random selection of the tracks each time and continuous playing in any order. It lets you enjoy hours of tireless track listening.



■ Playing tracks in a random order

1 Make sure the PGM indicator is extinguished.

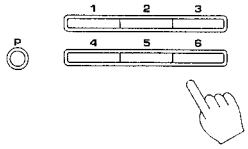


- If the PGM indicator is lit, press P.MODE key to extinguish the PGM indicator.

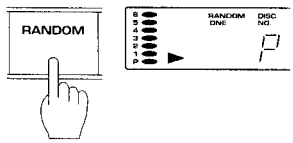
2 Select the desired random mode.

To randomly play a single disc

① **Select the disc.**

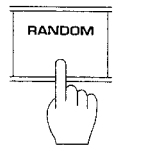


②



Select RANDOM ONE.

To randomly play all discs



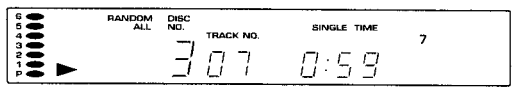
Select RANDOM ALL.

Each press changes the random mode as shown below.

RANDOM ONE ⟶ RANDOM ALL ⟶ goes off ⟶

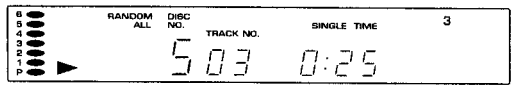
- Tracks on one disc are selected in a random order and played.
- Tunes are selected and played at random from all of the discs.

Display when track 7 of disc 3 is selected first

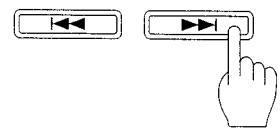


- When one tune ends, the next tune is randomly selected and played.

Display when track 3 of disc 5 is selected next



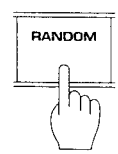
To select another track during random play



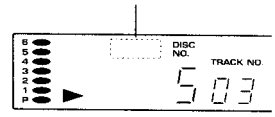
- When the |◀◀ key is pressed once during random play, the track starts again from the beginning.

To cancel random play

Press to off.



Goes off.

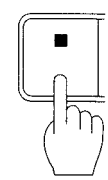


Each press changes the random mode as shown below.

RANDOM ONE ⟶ RANDOM ALL ⟶ goes off ⟶

- Normal play starts from the track being played.

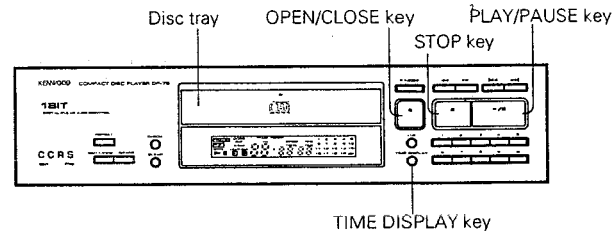
or



- Playback stops.

Note:
The same track will not play twice over continuously, however, it may happen that the same track is repeated later in play.

Playback operation of CD player (For the M-97 system)

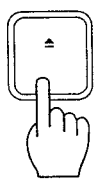


■ Playing a CD from the beginning (TRACK mode)

1 Select the CD/LD input.

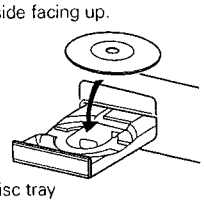
2 Load a CD.

① **Open the disc tray.**



② **Place a disc on the tray.**

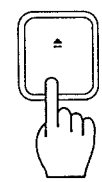
Label side facing up.



Disc tray

- Hold the disc taking care not to touch the side to be played.
- Be sure to place only one CD at a time.

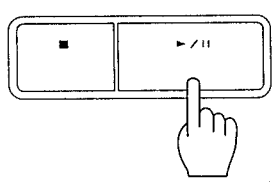
③ **Close the tray.**

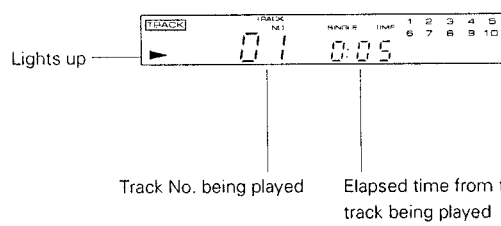


TRACK indicator lights up.

The track Nos. recorded on the CD are displayed.

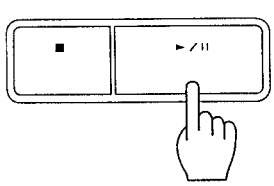
3 Start playback.

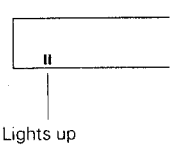




- In a few seconds, playback starts from track No.1.

To pause CD play

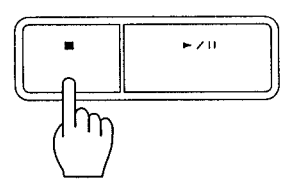




Lights up

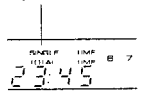
To resume playback, press the ▶/II key again.

To stop CD play

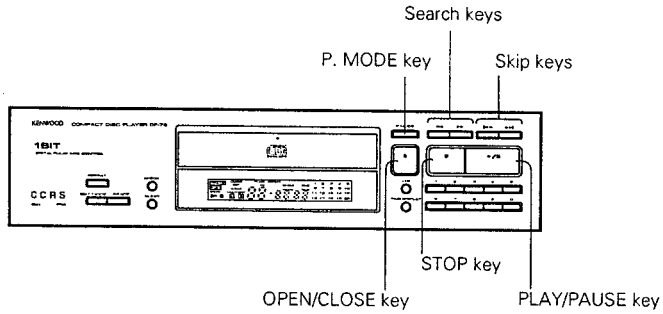


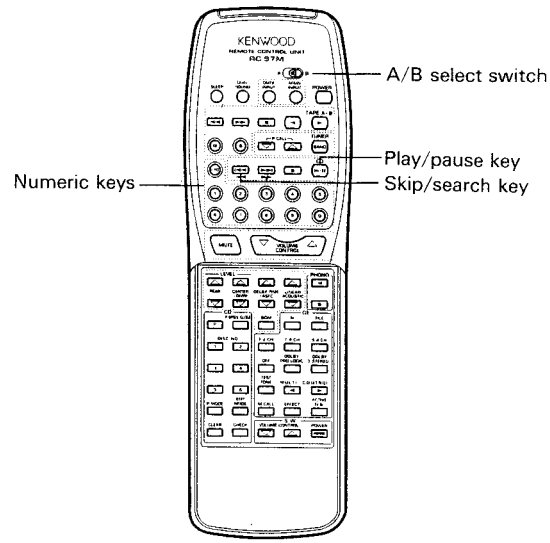
TIME DISPLAY key

Press the TIME DISPLAY key when you want to check the elapsed time and remaining time of the track being played. Every time the key is pressed, the displayed time changes as shown below.
The time information display may not appear when playing a CD containing 44 or more tracks. In such a case, the display (remaining SINGLE TIME) will show "– – : – –".



SINGLE TIME	SINGLE TIME	TOTAL TIME	TOTAL TIME
Elapsed time of the track being played	Remaining time of the track being played	Elapsed time of the whole CD	Remaining time of the whole CD
Time display examples 1:23	-2:37	23:45	-36:15

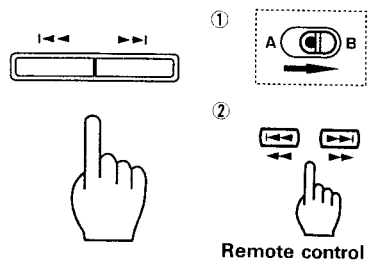




■ Listening from the desired track

Select with the skip key.

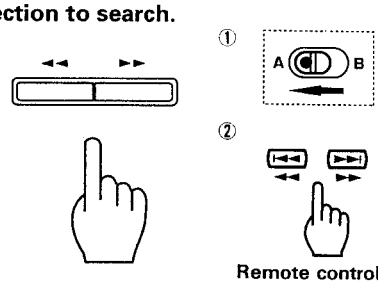
Press one of the skip keys according to the direction to skip.



- The tunes are skipped in the direction of the key and the play starts at the beginning of the selected tune.
- When the |◄◄ key is pressed once during play, the track starts again from the beginning.

Select with the search key.

Press the forward or reverse search key according to the direction to search.



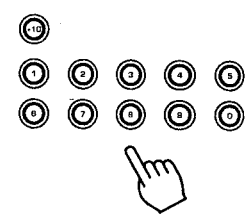
- The track will start to play from where you release the key.
- The fast forward or reverse speed increases as the key is held depressed.

Select with the numeric key.

1 Ensure that the CD player is in the TRACK mode.

- If the PGM indicator is lighted, press the P-MODE key.

2 Select the desired track.



Examples :

No. 23 : +10 +10 3

No. 40 : +10 +10 +10 +10 0

- Play starts from the selected tune and after.

Notes:

1. If a track No. which is not present on the CD is selected while the tray is open, the last track on the CD will be played.
2. Such a selection is not accepted after the tray has been closed or playback has started.

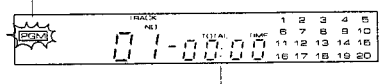
Up to 20 tunes can be programmed in the desired order and can be played.

■ Playing desired tracks in desired order (PGM mode)

1 Enter the PGM mode.

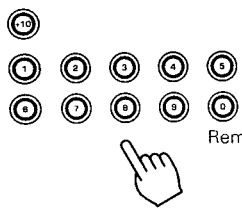
Press the [P-MODE] key.

[PGM] indicator lights up.



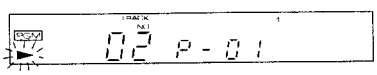
The SINGLE TIME display changes to the TOTAL TIME display.

2 Program desired tracks in desired order.



Remote control unit

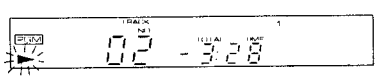
Example: To program track Nos. 2, 5, 25:
Press numeric keys [2], [5], [+10], [+10] and [5] in this order.



Track number

Indicator blinks.

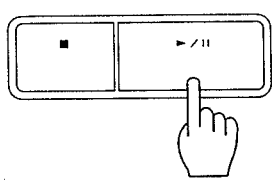
The number of the selected track in the program (P-No.) is displayed for a few seconds.



The total time of the selected track will be displayed.

- Up to 20 tracks can be programmed.
- If you make a mistake, press the [CLEAR] key and select the correct track.
- Tracks can also be programmed by reading the disc label while the disc tray is open.
- The time information is not displayed if a track No. of 44 or more is programmed.

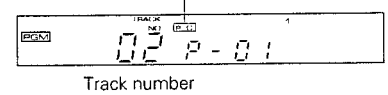
3 Start playback.



- Tracks are played in the order they are programmed (P-No.).
- If one of the skip keys ([►►I] or [I◄◄]) is pressed during programmed playback, the track being played is skipped in the forward or reverse direction.

To check the programmed order

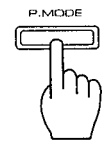
[P.C.] lights.



Track number

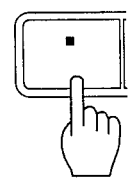
- Every time the [CHECK] key is pressed, the track No. and the order it was programmed (P-No.) are displayed in the order of programming.
- The previous display will resume in a few seconds.

To resume normal playback



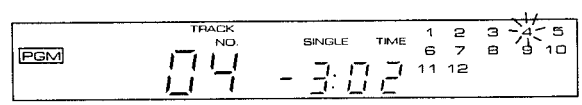
- The playback in the order of the track Nos. on CD will start after the track being played.

To stop programmed playback

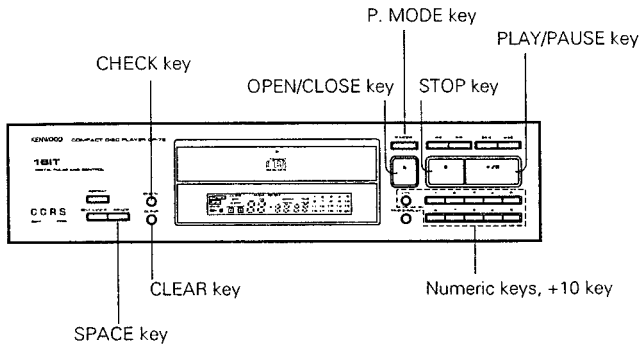


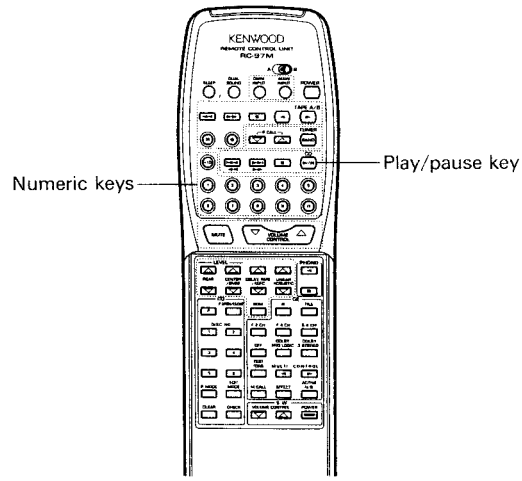
To check the time of each track on the disc.

In the program mode, when the disc is stopped, the time of each track on the disc can be checked by pressing the skip keys [►►I], [I◄◄].



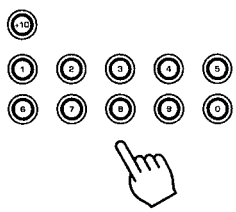
- The previous display will resume in a few seconds.





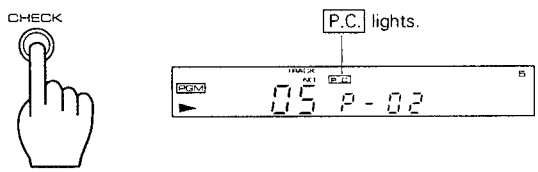
■ To add a track to the program

Select the track No. to be added.



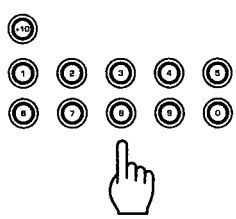
■ To change a track in the program

1 Press the CHECK key.



Press until the P-No. to be changed is displayed.

2 Select the track No. to replace the previous one.



Press while the P.C. indicator is lighted.

- The track being played cannot be changed.

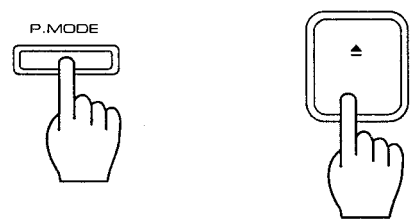
■ To clear tracks from the program

Clearing from the last track

- Every time the key is pressed, tracks are cleared from the last track in order.

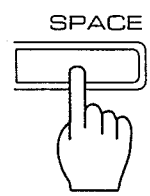
Clearing the whole of program

Press either of these keys.

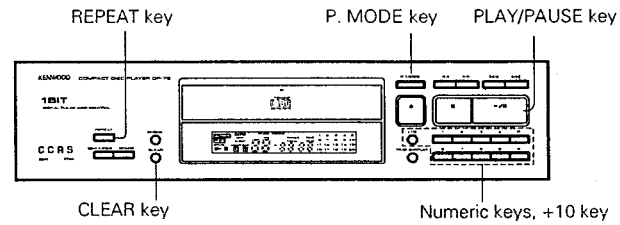


Auto-Space function

During playback in the program mode, when the SPACE key is pressed, a space of about 4 seconds is reserved automatically between the programmed tracks. This function is provided to facilitate the DPSS function of the cassette deck. However, such a space could also be reserved in case the sound of two tracks are continued, for example with some classic music and live recordings.



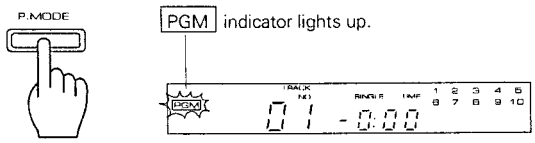
- The total time is displayed including the time of the space.
- To cancel Auto-Space function, press the SPACE key again.



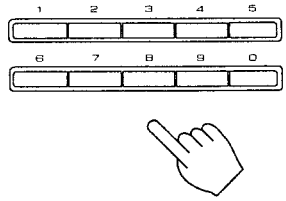
■ Repeated playback

Repeated playback of programmed tracks

1 Enter the PGM mode.

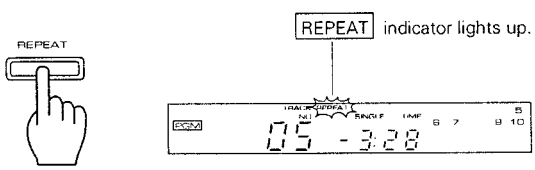


2 Select the desired track(s).

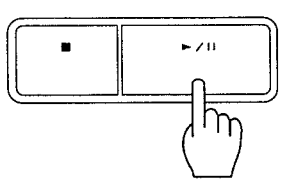


- All of the selected tracks will be played repeatedly.
- If only one track is selected, that track will be played repeatedly.

3 Press the REPEAT key.

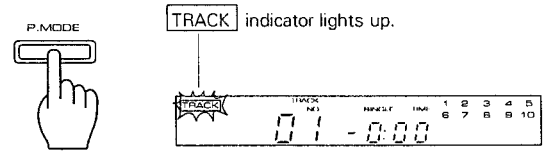


4 Start playback.

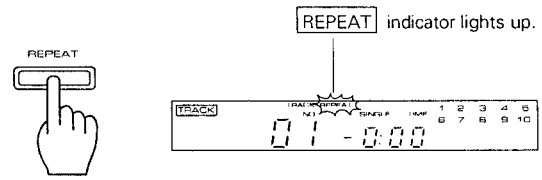


Repeated playback of the whole CD

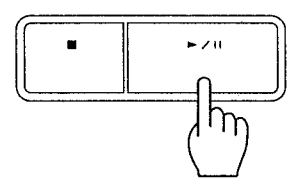
1 Enter the TRACK mode.



2 Press the REPEAT key.

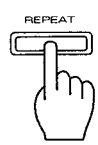


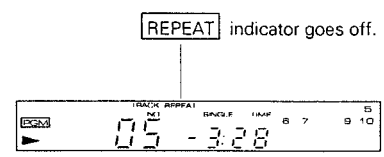
3 Start playback.



To resume normal playback

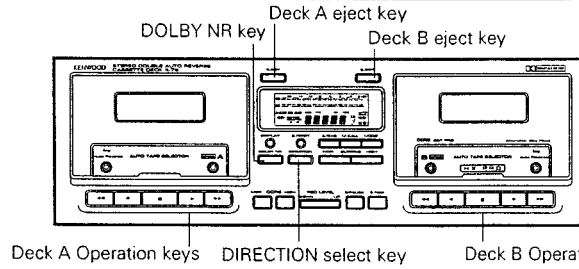
Press the REPEAT key again.





- The playback will be resumed under the CD player mode set before the repeat.

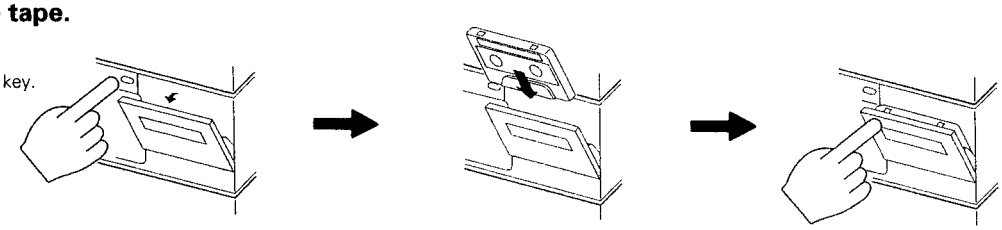
Playback operation of cassette decks



■ To play back a tape

1 Insert a cassette tape.

Press the eject key.

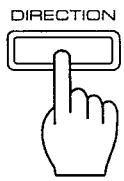


- The type of tape, Normal, Chrome or Metal, is detected and set automaticlaly.
- Be sure to remove tape slack before insertion.

Close securely
by pressing upper inside.

2 Determine the playback conditions.

① **Select the playback mode.**



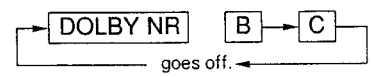
.....To play both sides endlessly.

.....To stop after playing both sides of tape.

.....To stop after playing one side of tape.

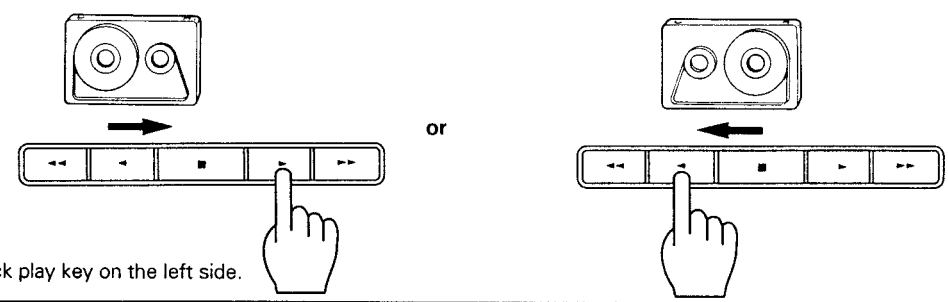
The indication changes every time the key is pressed.

② **Select the Dolby NR mode.**
Select according to the tape to be played.



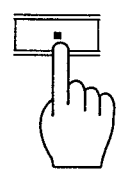
The indication changes every time the key is pressed.

3 Start playback.



- For play of deck A, use the A deck play key on the left side.

To stop playback



- Do not press the eject key until the tape has stopped completely.

Dolby noise reduction system

The Dolby noise reduction system was developed to reduce the tape hiss noise generated during playback.
The optimum effect of the Dolby NR system is obtained when the same type NR system is used for both recording and playback. If a different type NR system is used, playback is not performed correctly. Make sure that the same type noise reduction system is used for both recording and playback.

Dolby B NR

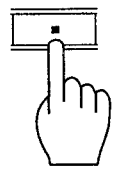
The most popular noise reduction system used in home audio components. Usually, Dolby NR system corresponds to B NR.

Dolby C NR

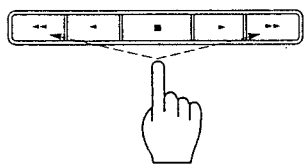
Dolby C NR offers improved noise reduction performance over that of theDolby B NR. It features a superior noise reduction effect. Use Dolby C NR to record or playback with this unit. It is recommended that tapes recorded with the Dolby NR system be marked "B" or "C", so that they can easily be distinguished.

■ To wind the tape at high speed

1 Stop playback.



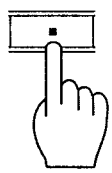
2 Press the ◄◄ key or ►► key.



◄◄ : Fast tape winding in the ⬅ direction

►► : Fast tape winding in the ➡ direction

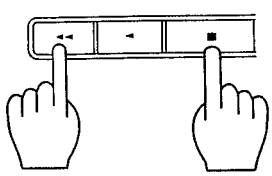
To stop fast tape winding



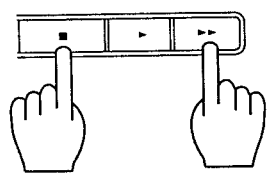
■ Zero-stop operation

This operation is not available from the remote control unit.

Press simultaneously.



Fast winding in the ⬅ direction



Fast winding in the ➡ direction

● Tape is wound until counter reading near "0000" where it stops.

To reset the counter

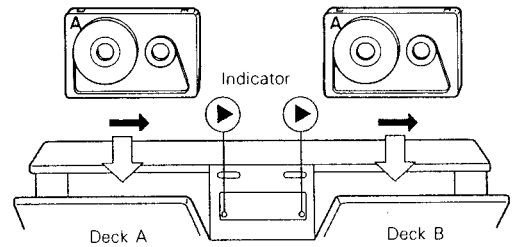
Before beginning to record (playback), press the C.RESET key to establish 0000. If you want to terminate recording or playback in the middle of a tape, write down the tape number. It will serve as a guide for finding the proper tape location when you want to continuing recording later on.
The zero stop function can be used to return the tape to the starting point of recording or playback.

C.RESET

■ Relay playback

This function plays back the tapes in both decks A and B continuously and repeatedly.

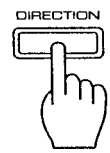
1 Insert tapes.

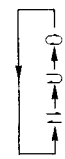


● Tapes are played in the directions indicated by their respective indicators on the display.

2 Select the playback mode.

DIRECTION





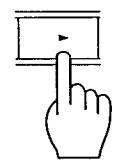
The indication changes every time the key is pressed.

⇄ ... Relay playback of both sides of tapes in decks A and B is repeated.

⇄ ... Relay playback of only one side of tapes in decks A and B is repeated.

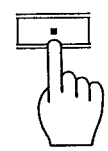
● Relay playback cannot be performed if the DIRECTION key is set to " ⇄ ".

3 Start playback.



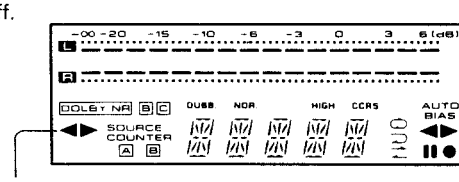
● The playback starts with the deck the play key of which is pressed.

To stop playback



Tape transport direction indicators

The ◄► indicators show the direction of tape transport in its playback or recording. The direction selected when the tape was stopped the last time is maintained even after the power is turned off. When the tape is started automatically by the automatic play operation, etc., the transport starts with the direction shown by the direction indicator. If you want to change the transport direction for the next time the power is turned on, press the play key of the opposite direction before turning power off.



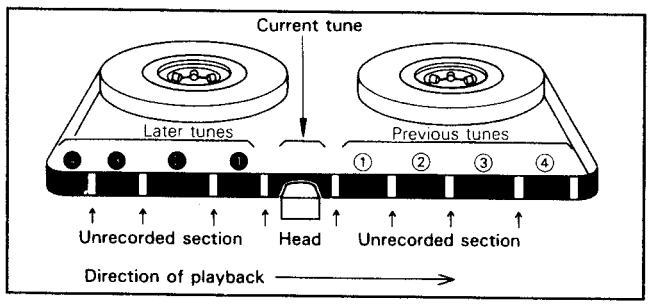
Deck A direction indicators

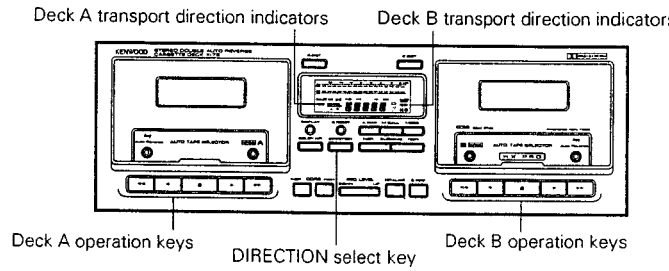
Deck B direction indicators

DPSS operation

The DPSS (Direct Program Search System) enables the following convenient operations according to the instructions of the operation keys (these operation are however not available on both decks simultaneously). The DPSS functions are based on the detection of non-recorded spaces of 4 seconds or more between tunes.

1. **Skip play:** **By specifying a tune located several tunes beyond (or behind) the tune being played, skips tunes between the current tune and the selected tune and starts playback from the beginning of the selected tune. Up to 16 tunes can be skipped in Skip Search.**
2. **Single-tune repeated playback:** **One single tune is played back repeatedly up to 16 times.**
3. **Rewind & Play:** **Rewinds the tape to the beginning and starts playback from there.**
4. **Dash & Play:** **If a non-recorded space of more than 10 seconds is detected during playback, that space will be skipped by fast forward tape winding.**

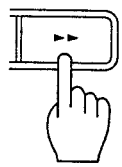



Deck A transport direction indicators
Deck B transport direction indicators
Deck A operation keys
DIRECTION select key
Deck B operation keys

■ Skip play operation

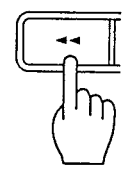
The example below shows the case in which the direction indicated by the tape transport direction indicator is ►. If the direction indicated by the tape direction indicator is ◄, always press the keys for the opposite directions to those shown in the illustrations below.

To play a tune located immediately after the tune being played



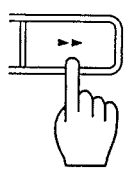
Press once during the playback.

To play the tune being played from the beginning



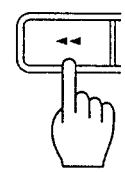
Press once during the playback.

To play a tune located 4 tunes beyond



Press 4 times during the playback.

To play the tune located 4 tunes behind



Press 5 times during the playback.

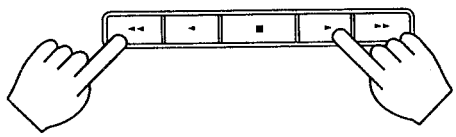
The DPSS will not function properly with the following types of tapes.

- Tapes containing spaces of 4 seconds or more, such as conversations and speeches.
- Tapes containing extremely low levels or non-recorded spaces in the middle of tunes, such as classical music.
- Tapes containing recording or large noise between tunes,.
- Tapes containing spaces of less than 4 seconds between tunes.
- Tapes recorded with low recording level.
- Tapes recorded using Cross-fade recording.

■ Rewind & Play operation

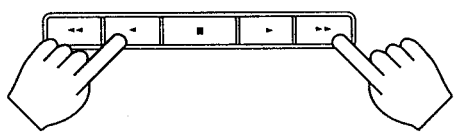
This operation is not available from the remote control unit.

Direction of tape direction indicator: ►



Press simultaneously.

Direction of tape direction indicator: ◄



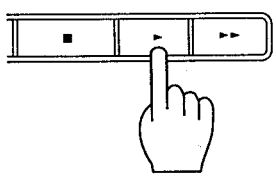
Press simultaneously.

■ Single-tune repeated playback operation

1 Play the tune to be repeated.

2 Press the play key of the same direction as the current tape transport direction.

When direction of tape direction indicator is ►

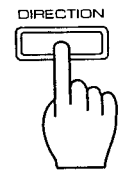


- Normal playback resumes after repeating the same tune for 16 times.

■ Dash & Play operation

The Dash & Play skips long non-recorded spaces automatically as the tape is played.
This operation is not available from the remote control unit.

1 Determine the playback mode (conditions).



The indication changes every time the key is pressed.

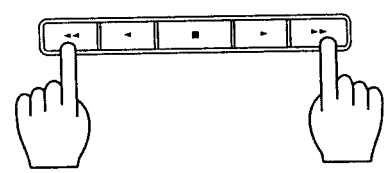
... Two sides are repeated 8 times, after which playback stops.

... Two sides are repeated only once, after which playback stops.

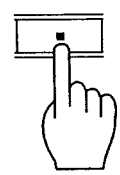
.. One side is repeated 8 times, after which playback stops.

- In case the DIRECTION key is set to " ⇄ " and tapes are inserted in both of the decks, when a deck finishes Dash & Play, the other deck starts Dash & Play for 16 times, after which it stops.

2 Press the ◄◄ and ►► keys simultaneously.



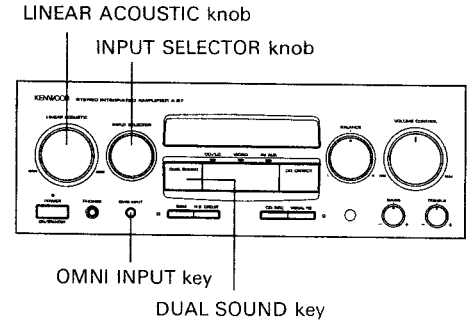
To cancel the playback above in the middle



- Playback is stopped.

Environmental sound system

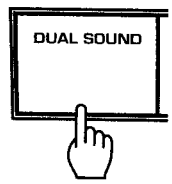
This system allows to reproduce two different sources independently through the main and omni directional speakers (OMNI-7). By overlapping the environmental sounds from the omnidirectional speakers on the music from the main speakers, the listener can be in an atmosphere just like listening to the music in that environment.

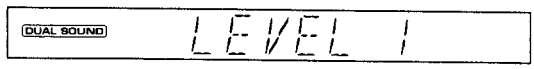


■ Dual sound play

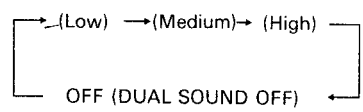
1 Switch the DUAL SOUND ON.

Select the environmental sound volume.





Each press changes the volume as follows:



● The dual sound play is possible when the presence mode is the F. 4ch mode or OFF.

2 Play an environmental sound.

① Select the OMNI input.

OMNI INPUT

Each press switches input as follows:

CD/LD → TAPE → MD/DAT
AV AUX ←

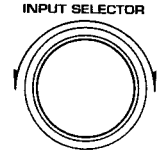
Lights.

② Play the source.

3 Play the music.

① Select the MAIN input.

INPUT SELECTOR



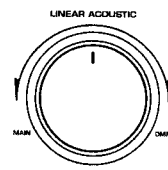
Switches the input as follows:

TUNER ↔ PHONO ↔ CD/LD ↔ VIDEO
↕ ↕
TAPE B ↔ TAPE A ↔ MD/DAT ↔ AV AUX

② Play the selected input source.

4 Adjust the volume balance.

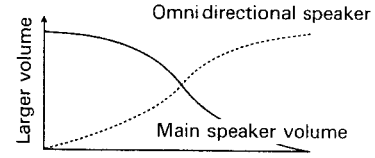
Adjust the desired volume balance between the MAIN and OMNI inputs with the LINEAR ACOUSTIC control of the main unit or the LINEAR ACOUSTIC keys of the remote control unit.

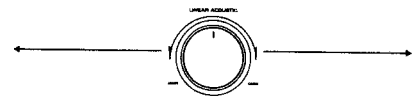


To increase omnidirectional speaker volume.

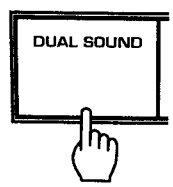
To increase main speaker volume

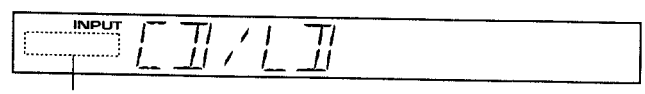
Omnidirectional speaker volume





To return to normal playback:



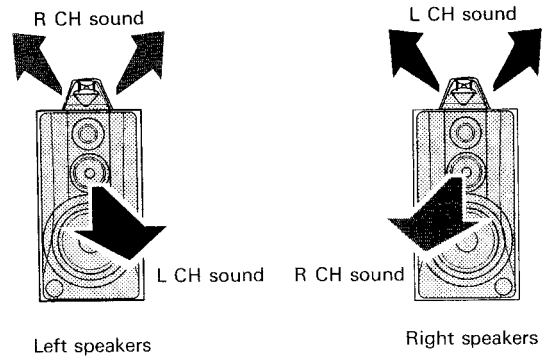


Goes out.

Press so that the DUAL SOUND indicator goes OFF.

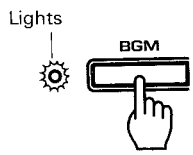
BGM play

When a music source is played in the BGM mode with optional omnidirectional speakers (OMNI-7) connected to the system, the front main speakers reproduce normal sound but the L CH omnidirectional speaker reproduces the R CH sound and the R CH omnidirectional speaker reproduces the L CH sound.
Because the sounds of both L CH and R CH are output from each speaker, this mode expands the area in which stereo play can be enjoyed.



■ To play in BGM mode

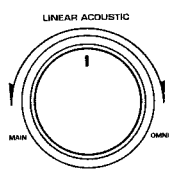
1 Enter the BGM mode.

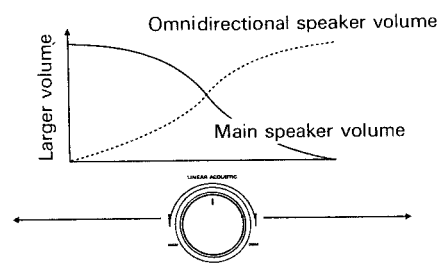


2 Play the desired source.

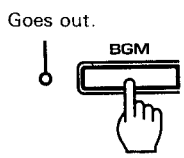
3 Adjust the volume balance.

Adjust the desired volume balance between the MAIN and OMNI inputs with the LINEAR ACOUSTIC control of the main unit or the LINEAR ACOUSTIC keys of the remote control unit.





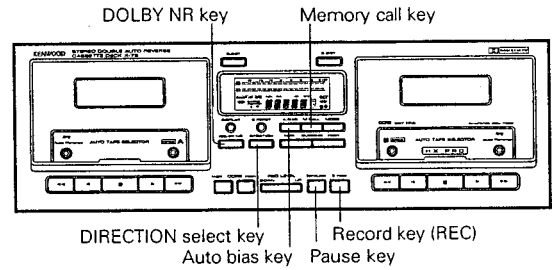
To cancel BGM mode:



Recording operation on cassette deck (Deck B only)

The cassette deck incorporates the Dolby HX Pro headroom extension function and auto-bias function to provide a recording with superior high- frequency characteristics.

The Dual Sound function allows to record the Main input sound and Omni input sound by mixing them.
In this case, be sure not to select the component used for recording as the Main input or Omni input source.

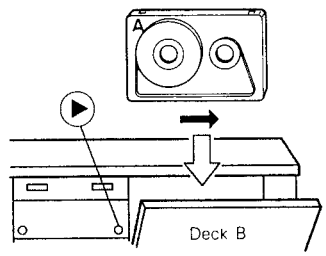


■ Ordinary recording

1 Set up the cassette deck.

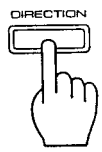
① **Insert a tape in deck B.**

Tape to be recorded onto Deck B



② **Set the tape transport direction.**

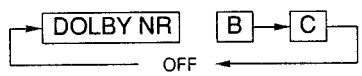
③ **Select one-side or two-side recording.**



: Two-side recording

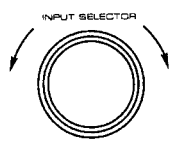
: One-side recording

④ **Select the Dolby NR mode.**

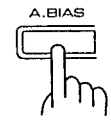


- Set the BALANCE control of the amplifier to the center position.
- Set the LINEAR ACOUSTIC knob of the amplifier to the center position.

2 Select the source to be recorded.



3 Activate the auto-bias setting.



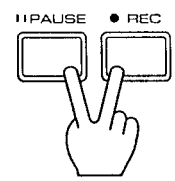
- The optimum bias is set in about 45 seconds, after which the deck enters the stop mode.
- To cancel the auto-bias adjustment operation in the middle, press the stop key.
- Recording is possible even when the auto-bias setting is omitted.
- Once set, the same auto-bias setting can be recalled even after it has been canceled by simply pressing the M.CALL key.

4 Set the recording level.

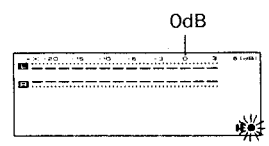
①**Play a music source.**

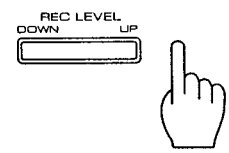
②**Enter the record-pause mode.**

Press the two keys simultaneously.



③**Adjust the recording level.**

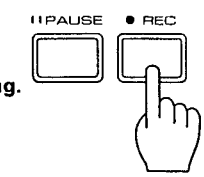




- Adjust so that segments around the 0 dB segment of the peak level meter light up at times.

④ **Stop playing the source.**

5 Start recording.



① **Play the music source from the beginning.**

② **Press the ● REC key.**

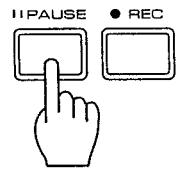
- Recording starts.
- If the position of the LINEAR ACOUSTIC control is changed during recording in the DUAL SOUND ON mode, the recorded volume (or the balance between the main speaker input and omnidirectional speaker input) will vary.
- The deck enters the stop mode automatically when the tape has been recorded till the end.

Auto-bias function

The tapes categorized as "normal" or "chrome" tape vary widely in the characteristics from popular to high-class types. Therefore, this system is equipped with the auto-bias adjustment function for exclusive use with normal and chrome tapes so that optimum recording can always be obtained with any types of normal and chrome tapes. It is recommended to use the auto-bias function when using a normal tape or chrome tape.

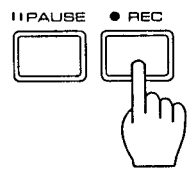
Notes:
1. During auto-bias adjustment, the keys are defeated except for the ►►, ◄◄ and ■ keys of deck A and ■ key of deck B.
2. If the amount of remaining tape is small, the auto-bias adjustment may be canceled in the middle and tape stopped at that position.
3. The auto bias level is canceled when the EJECT key of Deck B is pressed.

■ To pause recording temporarily



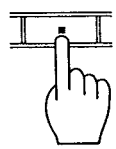
● The II indicator lights up.

To resume recording



■ To stop recording

1 Press the stop key of B deck.



Press once.

2 Stop playing the source component.

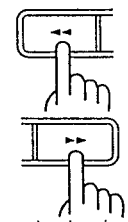
■ To re-start recording after mistake

Convenient for re-recording in the middle of a music piece.
A non-recorded space of 4 seconds or more should be reserved before the position where recording was started.

1 Stop recording and rewind tape.

During recording in the ► direction:

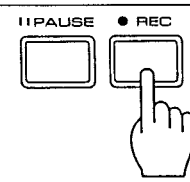
During recording in the ◄ direction:



● Recording stops. The tape rewinds to the beginning of the music piece which was just being recorded. Then the tape goes forward so as to make a blank space of about 2 seconds after the previous music piece, and operation.

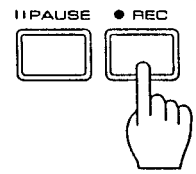
2 Re-start recording.

①Press the ● REC key twice.



● A non-recorded space of 4 seconds is reserved on tape, then the tape transport stops.

②Press the ● REC key once.

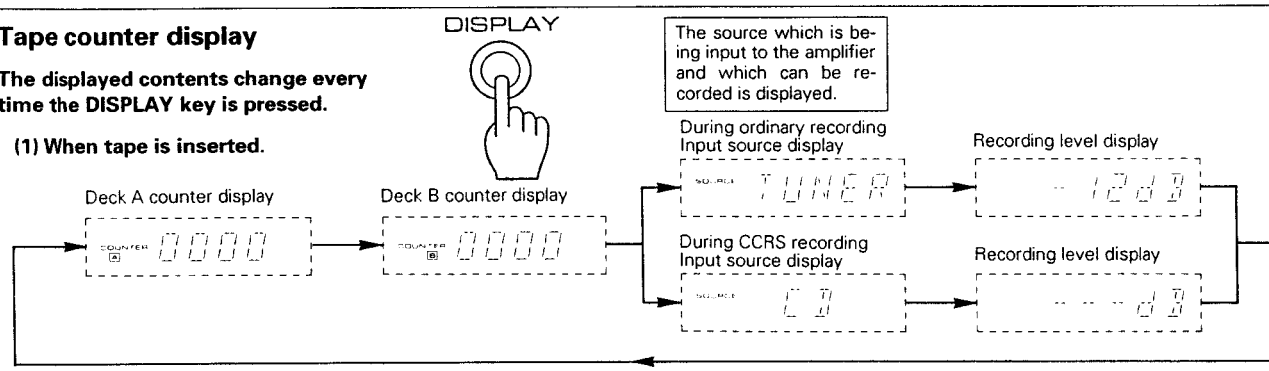


● Recording starts.

Tape counter display

The displayed contents change every time the DISPLAY key is pressed.

(1) When tape is inserted.


DISPLAY
The source which is being input to the amplifier and which can be recorded is displayed.
Deck A counter display
Deck B counter display
During ordinary recording
Input source display
Recording level display
During CCRS recording
Input source display
Recording level display

(2) When tape is not inserted.

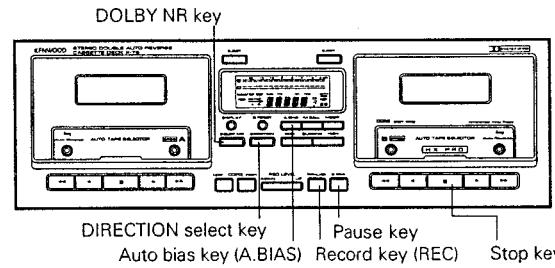
When the REC LEVEL key is pressed, the recording level is displayed for about 5 seconds regardless of the DISPLAY key setting. Although the standard recording level has been set for each input source of the amplifier, the standard level can be varied by pressing the REC LEVEL key.
The standard level is not displayed during CCRS recording.

Recording with Dolby HX Pro

When recording on B deck, the Dolby HX Pro headroom extension function automatically operates to provide a recording with superior high-frequency characteristics.

What is Dolby HX Pro?

In ordinary recording using high-frequency biasing, the high-frequency bias current, which should be constant, is increased with some recording sources due to the high-frequency component contained in the music, etc. This increase affects the recording characteristics with distorted high frequencies and degraded dynamic range and frequency response.
The Dolby HX Pro circuit detects the high-frequency component contained in the music source being recorded, and reduces excessive bias current to make it constant. As a result, the recording characteristics of high frequencies are drastically improved, and the improved high-frequency reproduction can also be enjoyed even when the tape is played on tape decks which are not equipped with circuit.

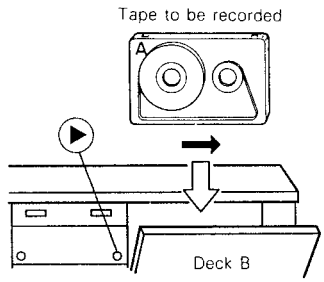


■ Synchro recording of CD playback

The cassette deck and CD player can be started simultaneously.
Synchro recording is not possible during Dual Sound play.

1 Make the preparations for recording.

① **Insert the cassette tape in deck B.**

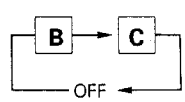


② **Set the tape transport direction.**

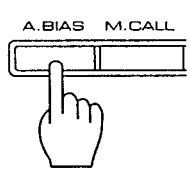
③ **Select the tape side(s) to be recorded.**

: Two-side recording
: One-side recording

④ **Select the Dolby NR mode.**



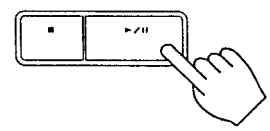
2 Activate the auto-bias setting.



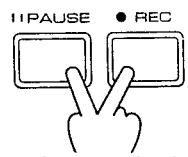
- After about 45 seconds, setting is completed.
- When you want to continue using the same type of tape, press the [M.CALL] key and the same bias value as previously can be set immediately.

3 Adjust the recording level.

① **Playback CD.**

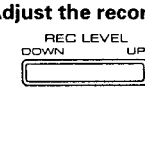


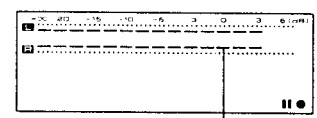
② **Enter the record-pause mode.**



Press the two keys simultaneously.

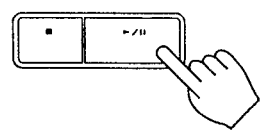
③ **Adjust the recording level.**





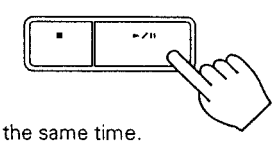
④ **Make the CD stop temporarily.**

As a result the indicator lights up to 0dB on occasion.



4 Start playing the CD.

① **Press the numerical keys for the number of the music piece to be recorded.**
② **Start playback.**



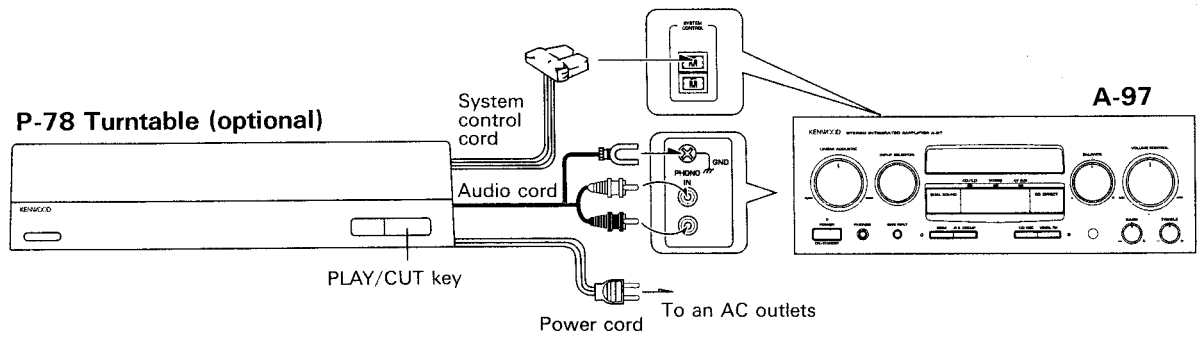
- Tape recording starts at the same time.
- When the CD player has completed playback, the cassette deck also stops recording and enters the stop mode.

To pause
Press the [►/II] key of the CD player.

To resume recording
Press the [►/II] key of the CD player.

To stop recording
Press the [■] key of the CD player.

- When the [■] key on the cassette deck is pressed, the cassette deck enters the stop mode, but the playback of CD does not stop.



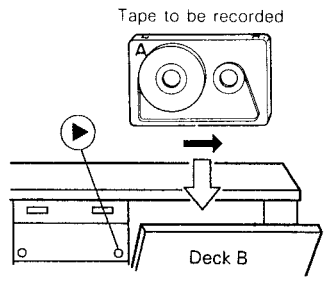
■ Synchro recording of analog disc play

The cassette deck and turntable can be started simultaneously. This cannot be done with remote control.
Synchro recording is not possible during Dual Sound play.

Confirm that each cord is connected securely.

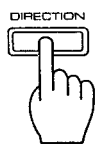
1 Make the preparations for recording.

① **Insert the cassette tape in deck B.**



② **Set the tape transport direction.**

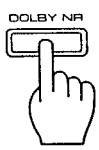
③ **Select the tape side(s) to be recorded.**

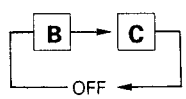


: Two-side recording

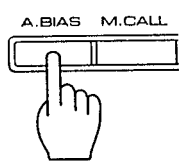
: One-side recording

④ **Select the Dolby NR mode.**





2 Activate the auto-bias setting

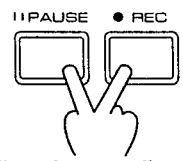


- After about 45 seconds, setting is completed.
- When you want to continue using the same type of tape, press the M.CALL key and the same bias value as previously can be set immediately.

3 Adjust the recording level.

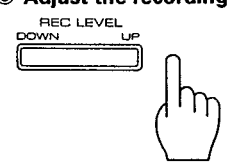
① **Playback analog disc.**

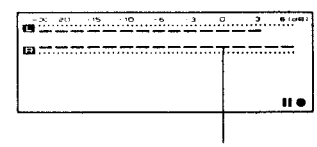
② **Enter the record-pause mode.**



Press the two keys simultaneously.

③ **Adjust the recording level.**



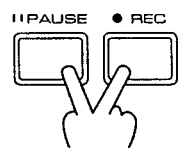


As a result the indicator lights up to 0dB on occasion.

④ **Stop the record.**

- The cassette deck returns to stop condition.

4 Enter the record-pause mode.



Press the two keys simultaneously.

5 Start playing the analog disc.

Press the PLAY/CUT key of the turntable.

- Tape recording starts at the same time.
- When playback of the turntable is completed, the cassette deck stops recording and terminates.

To stop midway during operation,

Press the PLAY/CUT key of the turntable.

- When the ■ key of the cassette deck is pressed, the cassette deck stops but the turntable does not stop.

Recording of CD playback (CCRS) (For the M-97M system)

The CCRS (Computer-controlled CD Recording System) makes the following convenient recordings possible by setting the optimum recording level and recording bias for the specific CD to be recorded and starting recording automatically. (CCRS recording is available only with Deck B.)

FADE recording ..... **CCRS starts recording the CD tracks from the first track in order. When the end of one tape side is reached during recording, fade-out occurs there, and recording is continued on the other side of tape.**

ERASE recording ..... **When the end of one tape side is reached during recording, the track which should end in the middle is erased, and the recording of the other side of tape is started from the beginning of that track.**

CROSS-fade recording ..... **The beginning and end of each track is faded in/out to create a music tape without interruption between tunes.**

Normal EDIT recording ..... **When the recording time of the tape is specified first, the order of the CD tracks are edited so that no track is interrupted at the end of each side of tape. The maximum number of tracks that can be edited is 20.**

AI EDIT recording ..... **When the total playing time of a CD exceeds the recording time of tape, all tracks (max. 20 tracks) can still be accommodated in the tape by fading out the end of each track.**

Multi disc recordings ..... **On to one tape, a single disc or from assorted discs up to a maximum of 32 tracks can be recorded.**

CCRS double-speed recording ..... **Records CD at twice the normal speed. Use of Dolby NR is not possible.**

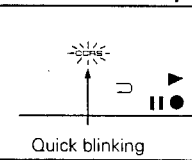
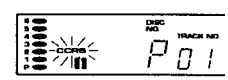
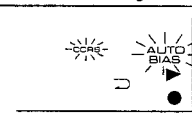
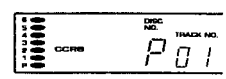
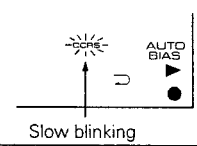
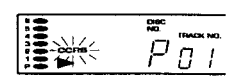
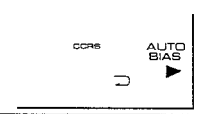
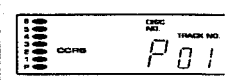
CCRS (Computer-controlled CD Recording System)

When the CCRS key is pressed, the following operations occur automatically and recording of CD starts after them.

1. The CD is played and its peak level is sampled from the level used when the disc was recorded.
2. The optimum recording level for that disc is determined from the sampled peak level and the cassette deck is set accordingly.
3. The cassette deck sets automatically the optimum bias for the tape used in recording.
4. The recording preparations detailed above are completed in about 90 seconds, after which actual recording starts.
5. When the recording is completed (when the CD player ends playback or when the tape has been recorded), both the cassette deck and CD player enter the stop mode.

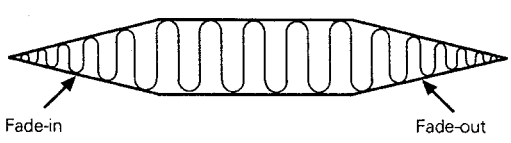
- The set recording level and auto bias level are maintained while the CCRS and AUTO BIAS indicators are lighted.
- The recording level is canceled when the open/close key of the CD player is pressed, the auto bias level is canceled when the EJECT key of Deck B is pressed, and both are canceled if the power is turned off.

Display during CCRS operation

	Cassette deck display	CD player display
During automatic recording level setting		
During auto bias setting		
During recording		
End of recording		

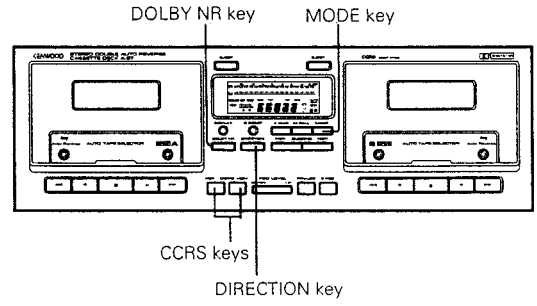
Fade-in and fade-out

Fade-in refers to a gradual increase of volume from the minimum to normal level when starting to play music.
Inversely, fade-out refers to a gradual decrease of volume from the normal to minimum level at the end of music.



CCRS double-speed recording

CD and cassette deck are both played at twice the normal speed and recorded, making it possible to half the time required for recording. Since the CD is played in double speed in this case, the recorded content cannot be enjoyable as music even though it can be monitored from the speakers.
(In double-speed recording, turn the EFFECT key of the graphic equalizer OFF.)
In double-speed recording, tunes are recorded onto the tape without Dolby NR effect. So playback the tape without Dolby NR effect.



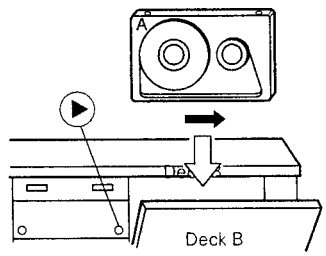
■ FADE recording

This function allows to provide fade-out and fade-in at the location where the tape is reversed.

1 Set up Deck B ready for recording.

① **Insert the cassette tape.**

Tape to be recorded



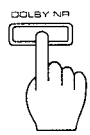
② **Set the tape transport direction.**

③ **Select the tape side(s) to be recorded.**

: Two-side recording

: One-side recording

④ **Select the Dolby NR mode.**



DOLBY NR → B → C → goes off.

2 Select the CD/LD input.

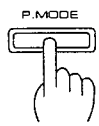
3 Insert the disc in the CD player.

- Close the door.

4 Select the disc and track to be recorded.

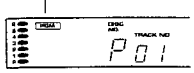
To record by programmed sequence:

① **Enter the PGM mode.**



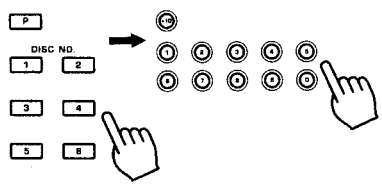
Remote control unit

PGM indicator lights up.



② **Program desired tracks in desired order.**

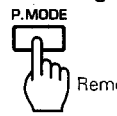
- Refer to page 32.



To record by track No. sequence:

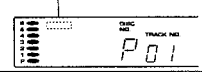
① **Make sure the PGM indicator is extinguished.**

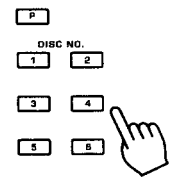
② **Select a favorite disc.**



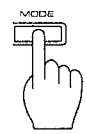
Remote control unit

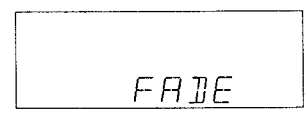
PGM indicator goes off.





5 Select the FADE recording mode.



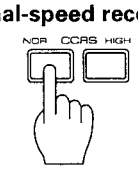


FADE → ERASE → CROSS

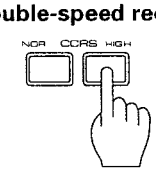
The mode changes every time the key is pressed.

6 Press the CCRS key.

Normal-speed recording.

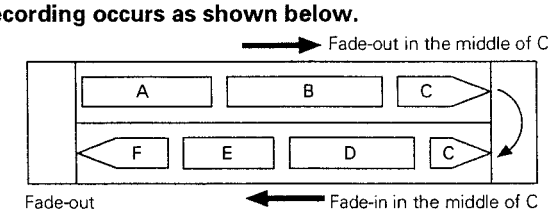


Double-speed recording.



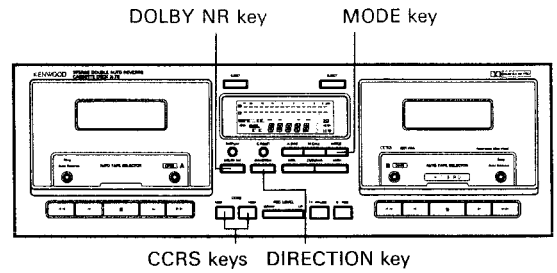
- HIGH or NOR. is displayed in the display.

Recording occurs as shown below.



Notes:

1. When the CCRS key is pressed during CD play, the playback is interrupted and CCRS setting operation starts.
2. The CCRS searches the peak level on a CD in a limited period of about 60 seconds. Therefore, it could happen that the optimum level cannot be adjusted, through it is a very rare case.
3. If the length of a track on the CD is extremely long such as with a classical music, the CCRS cannot be used because the music cannot be fit in one side of tape. In such a case, the CD should be recorded referring to "Synchro recording of CD playback".
4. When the remaining length of a tape is short, the erase recording may be carried out at the end of the tape.
5. When a music piece at the end of the tape is to fade out, if the space between this piece and the previous piece is small, a portion of the end of the previous pieces may also be erased.



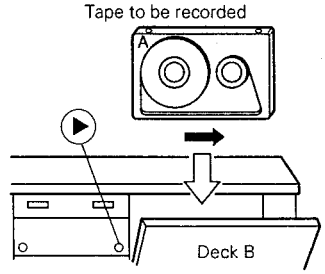
■ ERASE recording

When a track should end in the middle at the location where the tape is reversed, this function allows to erase automatically the recording of that track and start the recording of the other side with that beginning of the track.

1 Set up Deck B ready for recording.

① **Insert the cassette tape.**

Tape to be recorded



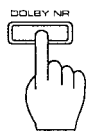
② **Set the tape transport direction.**

③ **Select the tape side(s) to be recorded.**

: Two-side recording

: One-side recording

④ **Select the Dolby NR mode.**



DOLBY NR B→C goes off.

2 Select the CD/LD input.

3 Insert the disc in the CD player.

- Close the door.

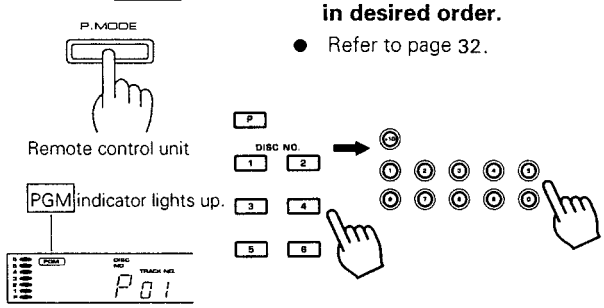
4 Select the disc and track to be recorded.

To record by programmed sequence:

① **Enter the PGM mode.**

② **Program desired tracks in desired order.**

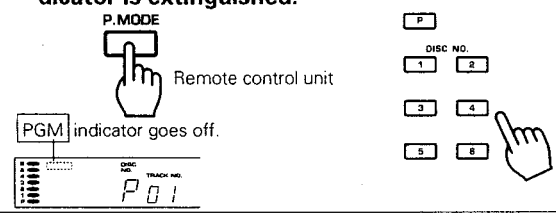
- Refer to page 32.



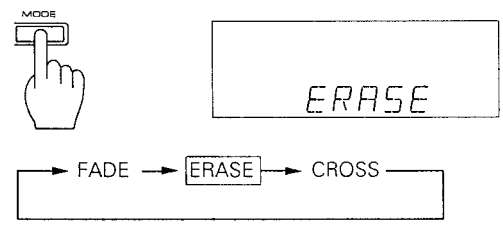
To record by track No. sequence:

① **Make sure the PGM indicator is extinguished.**

② **Select a favorite disc.**



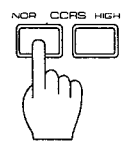
5 Select the ERASE recording mode.



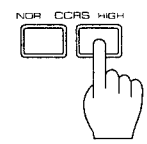
The mode changes every time the key is pressed.

6 Press the CCRS key.

Normal-speed recording.

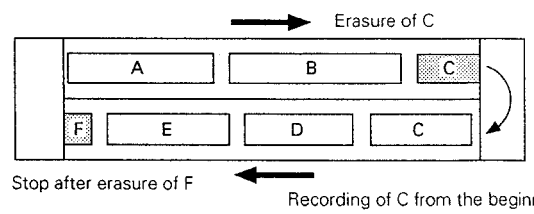


Double-speed recording.



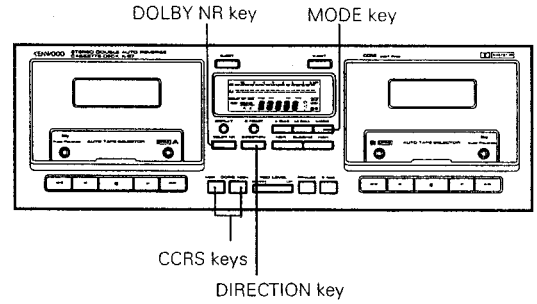
- HIGH or NOR. is displayed in the display.

Recording occurs as shown below.



Notes:

1. When the CCRS key is pressed during CD play, the playback is interrupted and CCRS setting operation starts.
2. The CCRS searches the peak level on a CD in a limited period of about 60 seconds. Therefore, it could happen that the optimum level cannot be adjusted, through it is a very rare case.
3. If the length of a track on the CD is extremely long such as with a classical music, the CCRS cannot be used because the music cannot be fit in one side of tape. In such a case, the CD should be recorded referring to "Synchro recording of CD playback".
4. When the transport direction indicator of the cassette deck is " ", the tape end processing occurs only on side A of tape.
5. When the tune being recorded at the end of the tape is to be erased, the ending part of the previous tune may also be erased if the space between the tunes is short.



■ CROSS- fade recording

This function causes the end of each track to be faded out while the beginning of the next track is faded in to create a music tape without interruption between tunes.

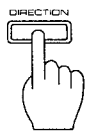
1 Set up Deck B ready for recording.

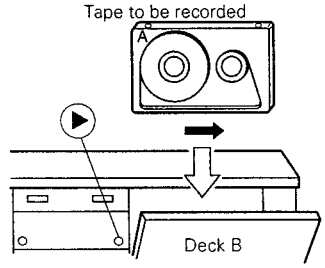
① **Insert the cassette tape.**

Tape to be recorded

② **Set the tape transport direction.**

③ **Select the tape side(s) to be recorded.**

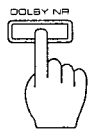




: Two-side recording

: One-side recording

④ **Select the Dolby NR mode.**



DOLBY NR B→C goes off.

2 Select the CD/LD input.

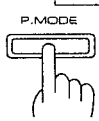
3 Insert the disc in the CD player.

- Close the door.

4 Select the disc and track to be recorded.

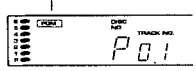
To record by programmed sequence:

① **Enter the PGM mode.**



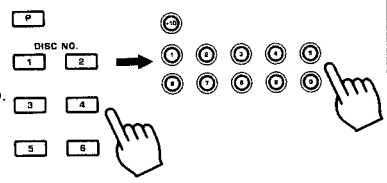
Remote control unit

PGM indicator lights up.



② **Program desired tracks in desired order.**

- Refer to page 32.

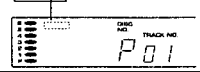


To record by track No. sequence:

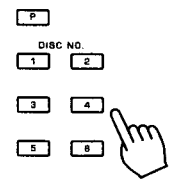
① **Make sure the PGM indicator is extinguished.**

Remote control unit

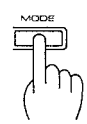
PGM indicator goes off.



② **Select a favorite disc.**



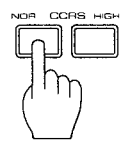
5 Select the CROSS-fade recording mode.



FADE → ERASE → CROSS

The mode changes every time the key is pressed.

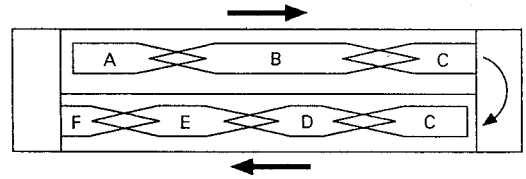
6 Press the NOR. key of CCRS.



- NOR. is displayed.

Recording occurs as shown below.

Recording inetrrupted in the middle of C



Stop after erasure of F

Recording of C from the beginning

- Tape end das not fade out.

Notes:

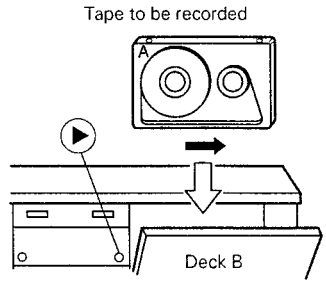
1. When the CCRS key is pressed during CD play, the playback is interrupted and CCRS setting operation starts.
2. The CCRS searches the peak level on a CD in a limited period of about 60 seconds. Therefore, it could happen that the optimum level cannot be adjusted, through it is a very rare case.
3. If the length of a track on the CD is extremely long such as with a classical music, the CCRS cannot be used because the music cannot be fit in one side of tape. In such a case, the CD should be recorded referring to "Synchro recording of CD playback".
4. If the beginning or end of a track is originally fade-in/faded-out, the blank between the tracks may be longer when CROSS-fade recorded.
5. The cross-faded parts of some tunes may not be clear. In such a case, record with another edit recording.
6. If cross-fade is used with the CD player Normal edit mode, the blank tape remaining at the end of each side of the tape may be longer than indicated on the CD player display.

■ Normal EDIT recording

This function allows to be edited, according to the recording time of the tape, to ensure the order of the CD tracks so that no track is interrupted at the end of each side of tape.

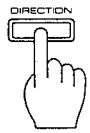
1 Set up Deck B ready for recording.

① **Insert the cassette tape.**



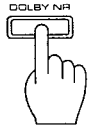
② **Set the tape transport direction.**

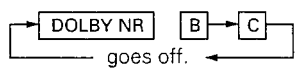
③ **Select the tape side(s) to be recorded.**



⇄ : Select two-side recording.

④ **Select the Dolby NR mode.**



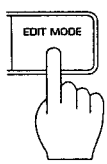


2 Select the CD/LD input.

3 Insert the disc in the CD player.

- Close the door.
- Verify that the PGM indicator is extinguished. If even only one tune is programmed, editing cannot be carried out.

4 Select the EDIT mode with the EDIT MODE key of the CD player.

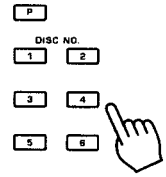


EDIT ⟷ AI EDIT

The mode changes every time the key is pressed.

- Proceed to the next step within 8 seconds after setting EDIT. If 8 seconds have elapsed, press the EDIT MODE key again.
- The CD playback mode is set automatically to PGM.
- When using the SPACE key, press the EDIT MODE key after pressing the SPACE key in PGM.

5 Press the disc selector key to select the disc to be recorded.



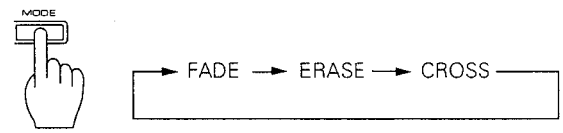
Remote contlol unit

6 Input the two-way recording time of the tape.

Use the numeric keys of the remote control unit.
C-60 tape: Press +10 6 times, and 0 once.
C-46 tape: Press +10 4 times, and 6 once.

- 46, 54, 60 or 90 can also be selected every time the TIME key is pressed. In this case, press the EDIT MODE key again to establish the input.
- Tracks are edited automatically to fit sides A and B, and the end of editing is indicated when the EDIT indicator changes from blinking to continuous lighting.

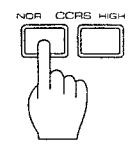
7 Select the mode with the MODE key of the cassette deck.



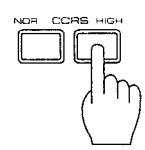
- Normal edit recording takes place when you select FADE or ERASE.
- When you select CROSS, the intervals between music pieces are linked by overlapping of fade out and fade in so that edit recording with no breaks between pieces takes place. In the CROSS mode, the double-speed recording is not possible.

8 Press the CCRS key.

Normal-speed recording

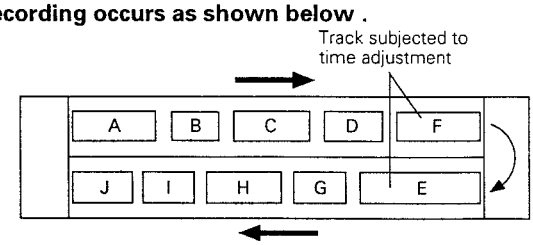


Double-speed recording



- In the CROSS mode, the double-speed recording is not possible.
- HIGH or NOR. is displayed in the display.

Recording occurs as shown below.



Tracks are recorded basically according to their numbers, but some tracks are replaced with tracks subjected to time adjustment.

- The CD player and cassette deck enter the stop mode automatically after the completion of recording.

Note:

When the time entered on CD player is longer than the recording tape, the music piece at the tape end fades out if FADE has been selected with the MODE key on the cassette deck. It ERASE has been selected. Confirm that the input time and the tape time are matched accurately.

■ AI EDIT recording

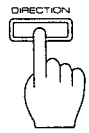
When the total playing time of a CD exceeds the recording time of tape, this function allows to accommodate all tracks (max. 20 tracks) in a tape by cutting the end of each track by means of fade out.

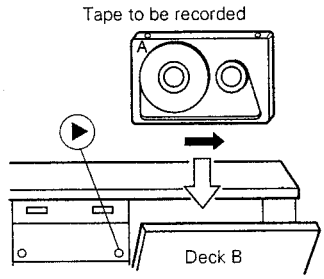
1 Set up Deck B ready for recording.

① **Insert the cassette tape.**

② **Set the tape transport direction.**

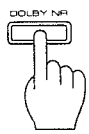
③ **Select the tape side(s) to be recorded.**





⇄ : Select two-side recording.

④ **Select the Dolby NR mode.**



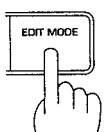
DOLBY NR → B → C → goes off.

2 Select the CD/LD input.

3 Insert the disc in the CD player.

- Close the door and make sure the PGM indicator is extinguished.

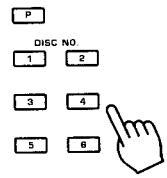
4 Select the AI EDIT mode with the EDIT MODE key of the CD player.



EDIT ⟷ AI EDIT

- Proceed to the next step within 8 seconds after setting AI EDIT. If 8 seconds have elapsed, press the EDIT MODE key again.

5 Press the disc selector key to select the disc to be recorded.



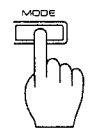
Remote control unit.

6 Input the two-way recording time of the tape.

Use the numeric keys of the remote control unit.
C-60 tape: Press +10 6 times, and 0 once.
C-46 tape: Press +10 4 times, and 6 once.

- 46, 54, 60 or 90 can also be selected every time the TIME key is pressed. In this case, press the EDIT MODE key again to establish the input.
- Tracks are edited automatically to fit sides A andB, and the end of editing is indicated when the AI EDIT indicator changes from blinking to continuous lighting.

7 Select FADE with the MODE key of the cassette deck.

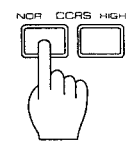


FADE → ERASE → CROSS

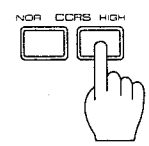
The mode changes every time the key is pressed.

8 Press the CCRS key.

Normal-speed recording.

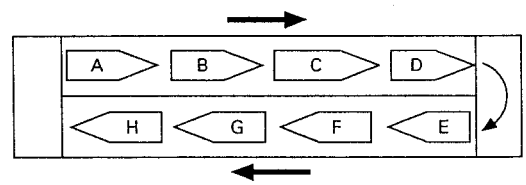


Double-speed recording.



- HIGH or NOR. is displayed in the display.

Recording occurs as shown below.



- If the tape has enough recording time, all tracks are recorded until the end.
- The CD player and cassette deck enter the stop mode automatically after the completion of recording.

Notes:
1. If an extremely-short tape recording time is set, automatic editing may not occur, or the tracks that must not be cut may be cut.
2. The SPACE key and REPEAT key functions are inoperative.

■ Multi-disc recordings

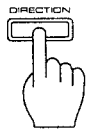
On to one tape, a single disc or from assorted discs up to a maximum of 32 tracks can be recorded.
Preparation: First, put the disc(s) to be recorded into the magazine and the Plus 1 Tray, leave the door closed.

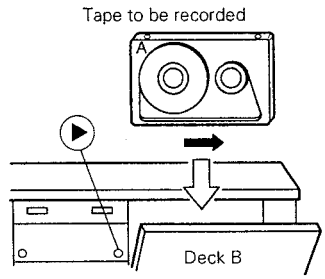
1 Set up Deck B ready for recording.

① **Insert the cassette tape.**

② **Set the tape transport direction.**

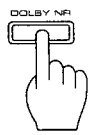
③ **Select the tape side(s) to be recorded.**





⇄ : Select two-side recording.

④ **Select the Dolby NR mode.**



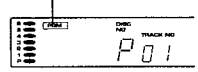
DOLBY NR → B → C → goes off.

2 Select the CD/LD input.

3 Set the CD player to PGM mode.

Remote controller

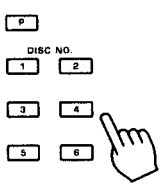
PGM indicator lights up.

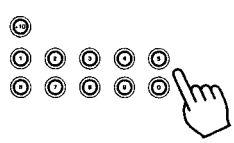


4 Select the track to be recorded.

- Refer to page 32.

① **Select the disc.** ② **select the track.**

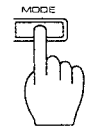


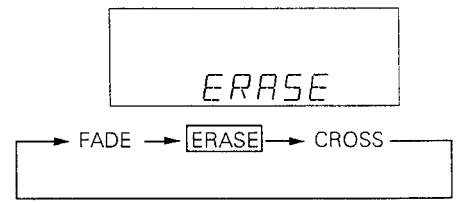


Remote control unit

- Repeat steps ① and ② to program up to 32 tracks.
- When "FULL" appears on the display, this indicates that tracks cannot be recorded any more. (Select the total recording time so that it does not exceed that of the tape.)

5 Select the ERASE recording mode.

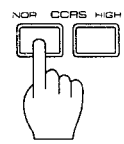




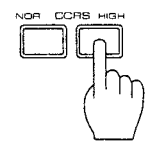
The mode changes every time the key is pressed.

6 Press the CCRS key.

Normal-speed recording.



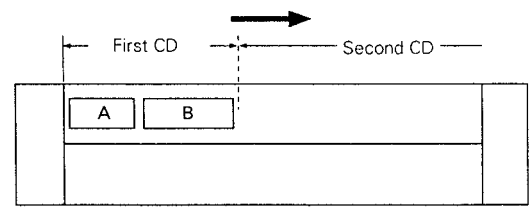
Double-speed recording.



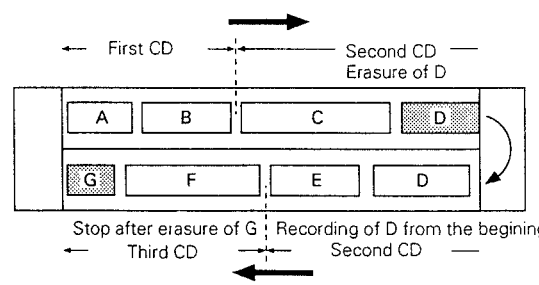
- By the CCRS function, the recording starts after 90 seconds.
- Records in the order of the selected tracks.

- When proceeding through the multi-disc program, as the discs are replaced the operations mentioned above are performed in the same way.

When the discs are replaced, the CD pauses for 60 seconds.

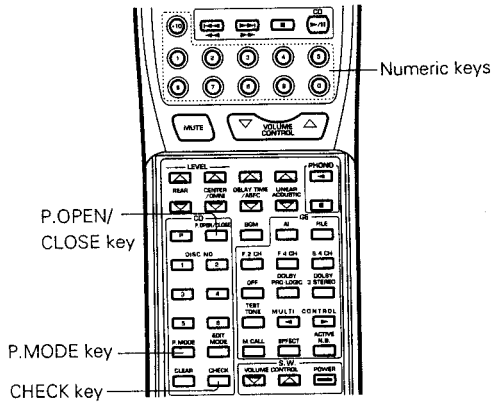


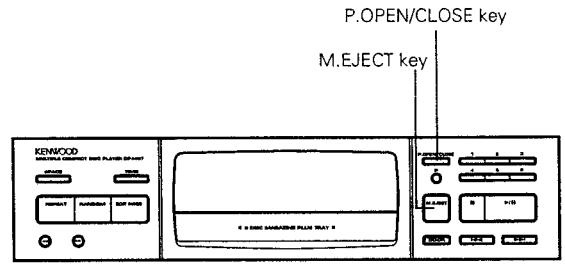
- The operations as shown below occur at the end of tape where it is reversed.



Notes:

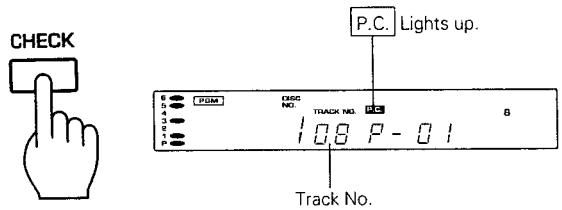
1. The CCRS searches the peak level on a CD in a limited period of about 60 seconds. Therefore, it could happen that the optimum level cannot be adjusted, through it is a very rare case.
2. If the length of a track on the CD is extremely long such as with a classical music, the CCRS cannot be used because the music cannot be fit in one side of tape.
3. When the tune being recorded at the end of the tape is to be erased, the ending part of the previous tune may also be erased if the space between the tunes is short.





■ To check the edited contents

Press the CHECK key on rememote control.

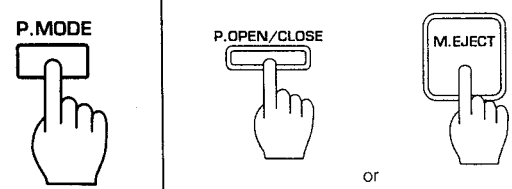


- Every time the key is pressed, the track Nos. are displayed in the edited order.

■ To clear the edited contents

Clearing all edited contents

Press any one of these keys.



Recording of CD playback (CCRS) (For the M-97 system)

The CCRS (Computer-controlled CD Recording System) makes the following convenient recordings possible by setting the optimum recording level and recording bias for the specific CD to be recorded and starting recording automatically. (CCRS recording is available only with Deck B.)

FADE recording ..... **CCRS starts recording the CD tracks from the first track in order. When the end of one tape side is reached during recording, fade-out occurs there, and recording is continued on the other side of tape.**

ERASE recording ..... **When the end of one tape side is reached during recording, the track which should end in the middle is erased, and the recording of the other side of tape is started from the beginning of that track.**

CROSS-fade recording ..... **The beginning and end of each track is faded in/out to create a music tape without interruption between tunes.**

Normal EDIT recording ..... **When the recording time of the tape is specified first, the order of the CD tracks are edited so that no track is interrupted at the end of each side of tape. The maximum number of tracks that can be edited is 20.**

AI EDIT recording ..... **When the total playing time of a CD exceeds the recording time of tape, all tracks (max.20 tracks) can still be accommodated in the tape by fading out the end of each track.**

MULTI EDIT recording ..... **Tracks on multiple CDs can be edited and accommodated in a single tape. The usable editing functions include the FADE and CROSS-fade recording functions.**

CCRS double-speed recording ..... **Records CD at twice the normal speed. Use of Dolby NR is not possible.**

CCRS (Computer-controlled CD Recording System)

When the CCRS key is pressed, the following operations occur automatically and recording of CD starts after them.

1. The CD is played and its peak level is sampled from the level used when the disc was recorded.
2. The optimum recording level for that disc is determined from the sampled peak level and the cassette deck is set accordingly.
3. The cassette deck sets automatically the optimum bias for the tape used in recording.
4. The recording preparations detailed above are completed in about 90 seconds, after which actual recording starts.
5. When the recording is completed (when the CD player ends playback or when the tape has been recorded), both the cassette deck and CD player enter the stop mode.

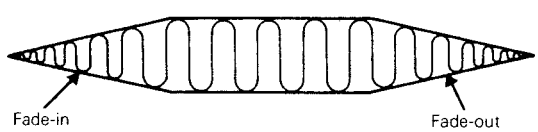
- The set recording level and auto bias level are maintained while the CCRS and AUTO BIAS indicators are lighted.
- The recording level is canceled when the open/close key of the CD player is pressed, the auto bias level is canceled when the EJECT key of Deck B is pressed, and both are canceled if the power is turned off.

Display during CCRS operation

	Cassette deck display	CD player display
During automatic recording level setting	CCRS Quick blinking	
During auto bias setting	CCRS AUTO BIAS	
During recording	CCRS AUTO BIAS Slow blinking	
End of recording	CCRS AUTO BIAS	

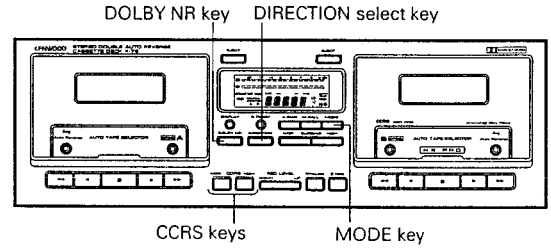
Fade-in and fade-out

Fade-in refers to a gradual increase of volume from the minimum to normal level when starting to play music.
Inversely, fade-out refers to a gradual decrease of volume from the normal to minimum level at the end of music.



CCRS double-speed recording

CD and cassette deck are both played at twice the normal speed and recorded, making it possible to half the time required for recording. Since the CD is played in double speed in this case, the recorded content cannot be enjoyable as music even though it can be monitored from the speakers.
(In double-speed recording, turn the EFFECT key of the graphic equalizer OFF.)
In double-speed recording, tunes are recorded onto the tape without Dolby NR effect. So playback the tape without Dolby NR effect.



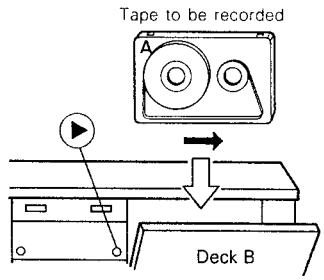
■ FADE recording

This function allows to provide fade-out and fade-in at the location where the tape is reversed.

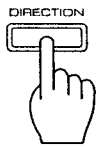
1 Set up Deck B ready for recording.

① **Insert the cassette tape.**

② **Set the tape transport direction.**



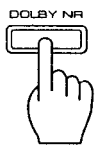
③ **Select the tape side(s) to be recorded.**

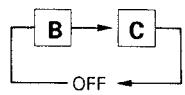


: Two-side recording

: One-side recording

④ **Select the Dolby NR mode.**

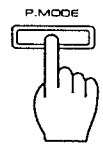




2 Select the CD/LD input.

3 Insert the disc in the CD player.

4 Select the CD playback mode.

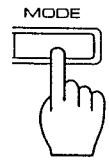


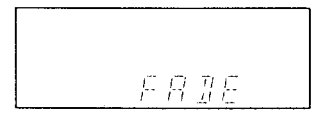
TRACK : For recording in order of track Nos.

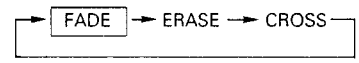
PGM : For recording in order of programming.

5 Select the FADE recording mode.

Press the MODE key.



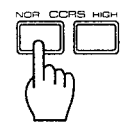




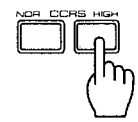
The mode changes every time the key is pressed.

6 Press the CCRS key.

Normal-speed recording

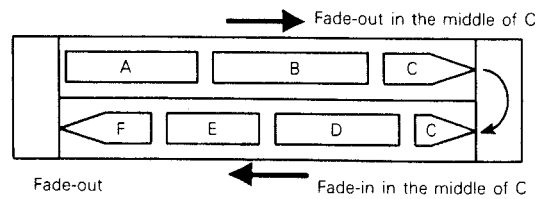


Double-speed recording



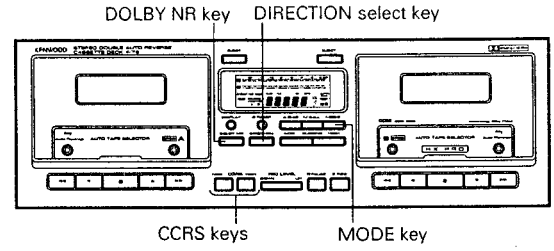
● HIGH or NOR. is displayed in the display.

Recording occurs as shown below.



Notes:

1. When the CCRS key is pressed during CD play, the playback is interrupted and CCRS setting operation starts.
2. The CCRS searches the peak level on a CD in a limited period of about 60 seconds. Therefore, it could happen that the optimum level cannot be adjusted, through it is a very rare case.
3. If the length of a track on the CD is extremely long such as with a classical music, the CCRS cannot be used because the music cannot be fit in one side of tape. In such a case, the CD should be recorded referring to "Synchro recording of CD playback".
4. When the remaining length of a tape is short, the erase recording may be carried out at the end of the tape.
5. When a music piece at the end of the tape is to fade out, if the space between this piece and the previous piece is small, a portion of the end of the previous pieces may also be erased.

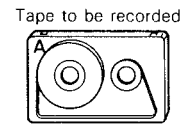


■ ERASE recording

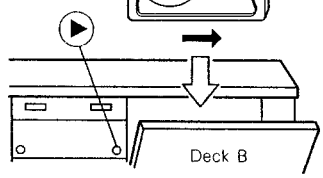
When a track should end in the middle at the location where the tape is reversed, this function allows to erase automatically the recording of that track and start the recording of the other side with that beginning of the track.

1 Set up Deck B ready for recording.

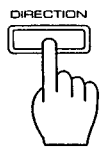
① **Insert the cassette tape.**



② **Set the tape transport direction.**



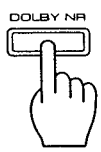
③ **Select the tape side(s) to be recorded.**

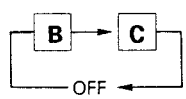


: Two-side recording

: One-side recording

④ **Select the Dolby NR mode.**

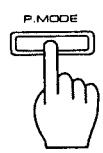




2 Select the CD/LD input.

3 Insert the disc in the CD player.

4 Select the CD playback mode.

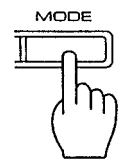


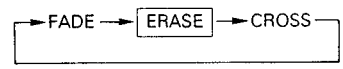
TRACK : For recording in order of track Nos.

PGM : For recording in order of programming.

5 Select the ERASE recording mode.

Press the MODE key.

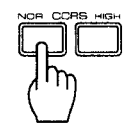




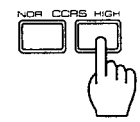
The mode changes every time the key is pressed.

6 Press the CCRS key.

Normal-speed recording

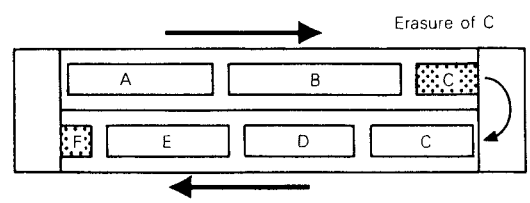


Double-speed recording



● HIGH or NOR. is displayed in the display.

Recording occurs as shown below.

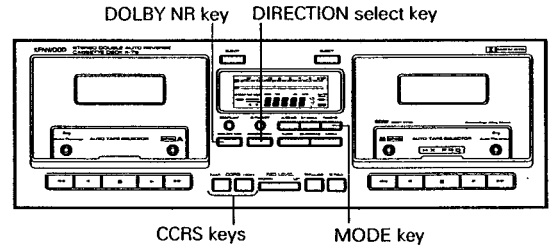


Stop after erasure of F

Recording of C from the beginning

Notes:

1. When the CCRS key is pressed during CD play, the playback is interrupted and CCRS setting operation starts.
2. The CCRS searches the peak level on a CD in a limited period of about 60 seconds. Therefore, it could happen that the optimum level cannot be adjusted, through it is a very rare case.
3. If the length of a track on the CD is extremely long such as with a classical music, the CCRS cannot be used because the music cannot be fit in one side of tape. In such a case, the CD should be recorded referring to "Synchro recording of CD playback".
4. When the transport direction indicator of the cassette deck is " ⇄ ", the tape end processing occurs only on side A of tape.
5. When the tune being recorded at the end of the tape is to be erased, the ending part of the previous tune may also be erased if the space between the tunes is short.



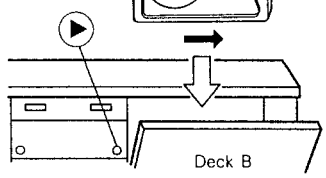
■ CROSS-fade recording

This function causes the end of each track to be faded out while the beginning of the next track is faded in to create a music tape without interruption between tunes.

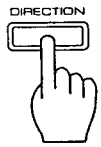
1 Set up Deck B ready for recording.

① **Insert the cassette tape.**

② **Set the tape transport direction.**



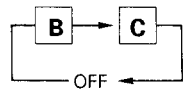
③ **Select the tape side(s) to be recorded.**



: Two-side recording

: One-side recording

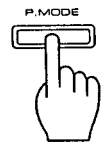
④ **Select the Dolby NR mode.**



2 Select the CD/LD input.

3 Insert the disc in the CD player.

4 Select the CD playback mode.

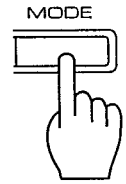


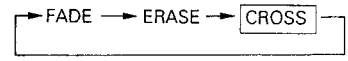
TRACK : For recording in order of track Nos.

PGM : For recording in order of programming.

5 Select the CROSS-fade recording mode.

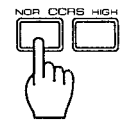
Press the MODE key.





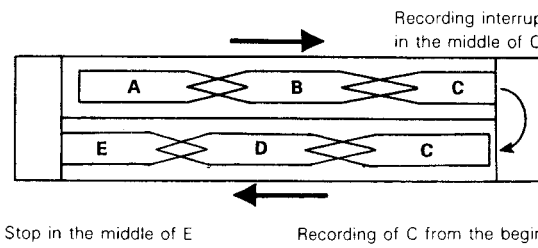
The mode changes every time the key is pressed.

6 Press the NOR. key of CCRS.



● NOR. of the display component lights up.

Recording occurs as shown below.



● Tape end does not fade out.

Notes:

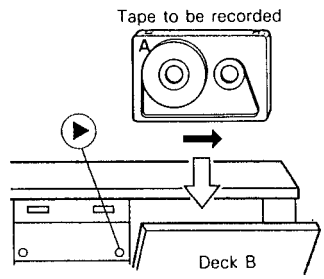
1. When the CCRS key is pressed during CD play, the playback is interrupted and CCRS setting operation starts.
2. The CCRS searches the peak level on a CD in a limited period of about 60 seconds. Therefore, it could happen that the optimum level cannot be adjusted, through it is a very rare case.
3. If the length of a track on the CD is extremely long such as with a classical music, the CCRS cannot be used because the music cannot be fit in one side of tape. In such a case, the CD should be recorded referring to "Synchro recording of CD playback".
4. If the beginning or end of a track is originally faded-in/faded-out, the blank between the tracks may be longer when CROSS-fade recorded.
5. The cross-faded parts of some tunes may not be clear. In such a case, record with another edit recording.
6. If cross-fade is used with the CD player Normal or Multi edit mode, the blank tape remaining at the end of each side of the tape may be longer than indicated on the CD player display.

■ Normal EDIT recording

This function allows to be edited, according to the recording time of the tape, to ensure the order of the CD tracks so that no track is interrupted at the end of each side of tape.

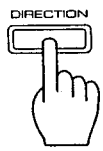
1 Set up Deck B ready for recording.

① **Insert the cassette tape.**



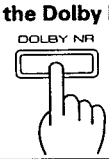
② **Set the tape transport direction.**

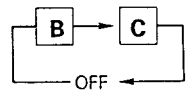
③ **Select the tape side(s) to be recorded.**



: Select two-side recording.

④ **Select the Dolby NR mode.**



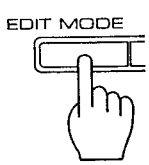


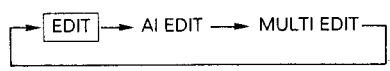
2 Select the CD/LD input.

3 Insert the disc in the CD player.

- When you wish to program tunes, carry out the programming before step 4.

4 Select the EDIT mode with the EDIT MODE key of the CD player.





The mode changes every time the key is pressed.

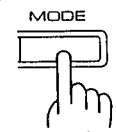
- Proceed to the next step within 8 seconds after setting EDIT. If 8 seconds have elapsed, press the EDIT MODE key again.
- The CD playback mode is set automatically to PGM.
- When using the SPACE key, press the EDIT MODE key after pressing the SPACE key in PGM.

5 Input the two-way recording time of the tape.

Use the numeric keys of the CD player.
C-60 tape: Press +10 6 times, and 0 once.
C-46 tape: Press +10 4 times, and 6 once.

- 46, 54, 60 or 90 can also be selected every time the TIME key is pressed. In this case, press the EDIT MODE key again to establish the input.
- Tracks are edited automatically to fit sides A and B, and the end of editing is indicated when the EDIT indicator changes from blinking to continuous lighting.
- If a program containing a few tracks has been programmed previously, these tracks can be recorded in priority.
- When the EDIT MODE key is pressed again while EDIT is lighted, "SHUFFLE" appears on the display and re-editing of tracks is performed.

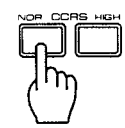
6 Select the mode with the MODE key of the cassette deck.



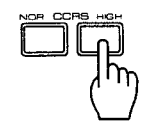
- Normal edit recording takes place when you select FADE or ERASE.
- When you select CROSS, the intervals between music pieces are linked by overlapping of fade out and fade in so that edit recording with no breaks between pieces takes place. In the CROSS mode, the double-speed recording is not possible.

7 Press the CCRS key.

Normal-speed recording

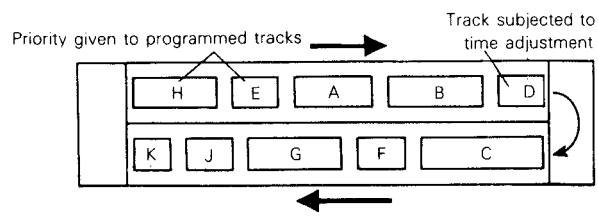


Double-speed recording



- In the CROSS mode, the double-speed recording is not possible.
- HIGH or NOR. is displayed in the display.

Recording occurs as shown below.



Tracks are recorded basically according to their numbers, but some tracks are replaced with tracks subjected to time adjustment.

- The CD player and cassette deck enter the stop mode automatically after the completion of recording.

Notes:

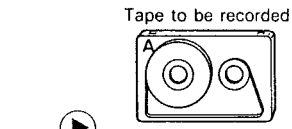
1. When the time entered on CD player is longer than the recording tape, the music piece at the tape end fades out if FADE has been selected with the MODE key on the cassette deck. It becomes erased if ERASE has been selected. Confirm that the input time and the tape time are matched accurately.
2. Edit operation does not occur if a track No. 44 or more has been programmed.

■ AI EDIT recording

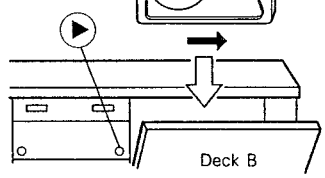
When the total playing time of a CD exceeds the recording time of tape, this function allows to accommodate all tracks in a tape by cutting the end of each track by means of fade out. It is also possible to specify the important tracks that must not be cut.

1 Set up Deck B ready for recording.

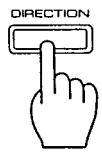
① **Insert the cassette tape.**



② **Set the tape transport direction.**

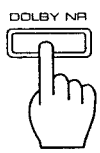


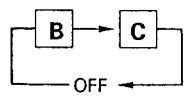
③ **Select the tape side(s) to be recorded.**



: Select two-side recording.

④ **Select the Dolby NR mode.**





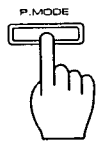
2 Select the CD/LD input.

3 Insert the disc in the CD player.

4 Select the tracks which must not be cut in recording.

① **Press the P-MODE key of the CD player.**

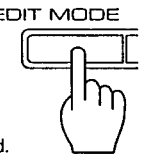
● PGM lights up.

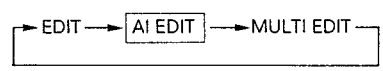


② **Input the track Nos. using the numeric keys.**

● Input several numbers in a desired order.

5 Select the AI EDIT mode with the EDIT MODE key of the CD player.





The mode changes every time the key is pressed.

● Proceed to the next step within 8 seconds after setting AI EDIT . If 8 seconds have elapsed, press the EDIT MODE key again.

6 Input the two-way recording time of the tape.

Use the numeric keys of the CD player.

C-60 tape: Press +10 6 times, and 0 once.

C-46 tape: Press +10 4 times, and 6 once.

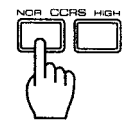
● 46, 54, 60 or 90 can also be selected every time the TIME key is pressed. In this case, press the EDIT MODE key again to establish the input.

● Tracks are edited automatically to fit sides A and B, and the end of editing is indicated when the AI EDIT indicator changes from blinking to continuous lighting.

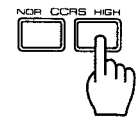
7 Select FADE with the MODE key of the cassette deck.

8 Press the CCRS key.

Normal-speed recording

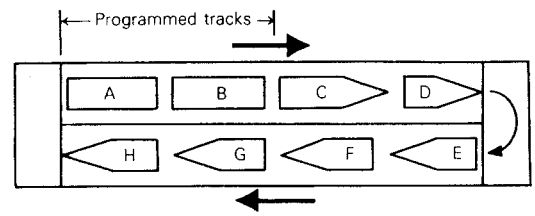


Double-speed recording



● HIGH or NOR. is displayed in the display.

Recording occurs as shown below.



● First, the programmed tracks are recorded without any cutting, the other tracks are recorded with the end of every track cut by fade-out.

● If the tape has enough recording time, all tracks are recorded until the end.

● The CD player and cassette deck enter the stop mode automatically after the completion of recording.

Notes:

1. If an extremely-short tape recording time is set, automatic editing may not occur, or the tracks that must not be cut may cut.
2. The SPACE key and REPEAT key functions are inoperative.
3. Edit operation does not occur if a track No. 44 or more has been programmed.

■ MULTI EDIT (Multiple disc edit) recording

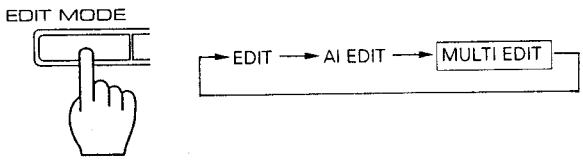
This function allows to edit desired tracks on multiple CDs, each of which containing no more than 20 tracks, and record them on a single tape while replacing discs.

1 Set up Deck B ready for recording.

2 Select the CD/LD input.

3 Insert the disc in the CD player.

4 Select the MULTI EDIT mode with the EDIT MODE key of the CD player.



- Proceed to the next step within 8 seconds after setting MULTI EDIT. If 8 seconds have elapsed, select the MULTI EDIT mode again.

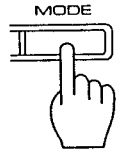
5 Input the two-way recording time of the tape.

Use the numeric keys of the CD player.
C-60 tape: Press +10 6 times, and 0 once.
C-46 tape: Press +10 4 times, and 6 once.

- 46, 54, 60 or 90 can also be selected every time the TIME key is pressed. In this case, press the EDIT MODE key again to establish the input.
- EDIT changes from blinking to continuous lighting, indicating the program input stand-by, and the recordable time of side A is displayed.

6 Select the desired mode of the cassette deck.

Press the MODE key.



Select the FADE or CROSS.

- Normal edit recording takes place when you select FADE.
- When you select CROSS, the intervals between music pieces are linked by overlapping of fade out and fade in so that edited recording with no breaks between pieces takes place.

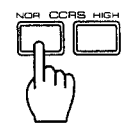
7 Select the tracks to be recorded.

Using the numeric keys of the CD player, input the track Nos. in the order they are to be recorded.

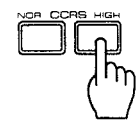
- The time remaining on side A or side B is indicated on the display.
- When the time remaining on side A is 30 seconds or less, the next music piece is programmed on side B.
- A music piece for which FADE is displayed during input of the music piece number on side A fades out. If another music piece number is entered, programming takes place on side B from that music piece.
- A music piece for which FAdE is displayed during input of the music piece number on side B fades out. If another music piece number is entered, "FULL" is displayed and no further programming can be accepted.

8 Press the CCRS key.

Normal-speed recording

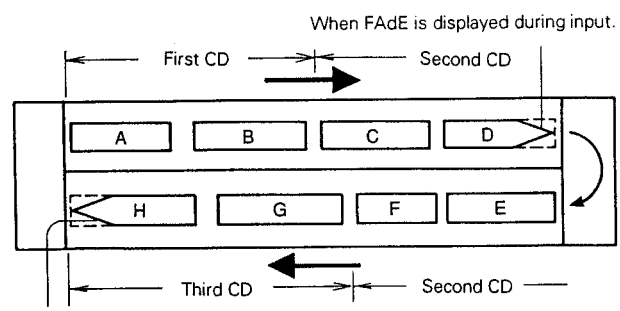


Double-speed recording



- HIGH or NOR. is displayed in the display.

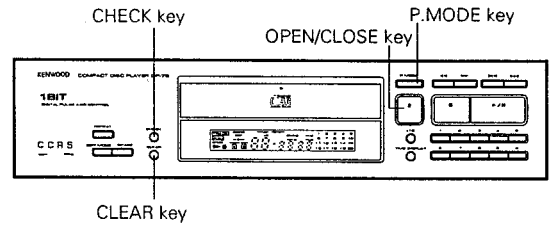
Recording occurs as shown below (examle when three CDs are to be recorded).



- Each time disc recording is completed, the CD player and cassette deck stop together and the CD player tray comes out automatically.
- To record a second or third disc, change the disc and close the disc tray, then repeat steps 7 and 8.

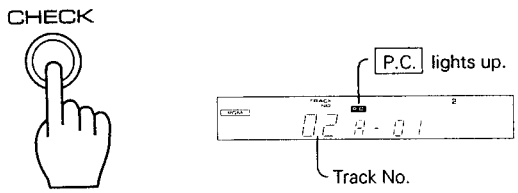
Notes:

1. When the time entered on CD player is longer than the recording tape, the music piece at the tape end fades out if FADE has been selected with the MODE key on the cassette deck. It becomes erased if ERASE has been selected. Confirm that the input time and the tape time are matched accurately.
2. Track No. 44 or more cannot be input.
3. The SPACE key and REPEAT key functions are inoperative.
4. If the disc tray automatically closes, press the Open/close key to open the tray, replace the disc, then repeat steps 7 and after.
5. When programming tracks, do not select more than three to five tracks whose total recording time will exceed 45 minutes for each CD. Failure to program your tracks within these limits can cause the CCRS recording control in the cassette deck to stop.



■ To check the edited contents

Press the CHECK key on the CD player.



- Every time the key is pressed, the track Nos. are displayed in the edited order.
- Only the track Nos. on the disc being present in the CD player are displayed in case of MULTI EDIT.

■ To clear the edited contents

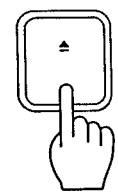
Clearing individual tracks from the last track (MULTI EDIT only)

Press the CLEAR key of the CD player.

- Every time the key is pressed, the last track in the edited sequence of tracks is cleared.
- Only the track on the disc being present in the CD player can be cleared.

Clearing all edited contents

Press either of the following keys of the CD player.

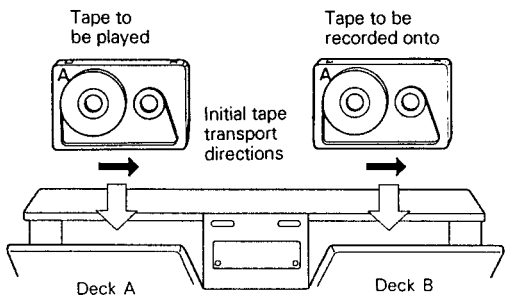


- Only the track on the disc being present in the CD player can be cleared in case of MULTI EDIT.

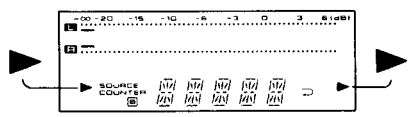
Tape dubbing

The dubbing refers to the copy of the recorded contents of a tape to another tape (tape in Deck A → tape in Deck B).
Normal-speed dubbing: Copy at normal tape speed.
High-speed dubbing: Copy at double the normal speed.

1 Insert tapes in the cassette decks.

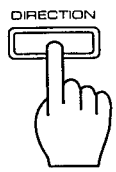


2 Set the same tape transport direction for both tapes.



Refer to page 42.

3 Select one-way or two-way dubbing mode.



The mode changes every time the key is pressed.

For two-way dubbing

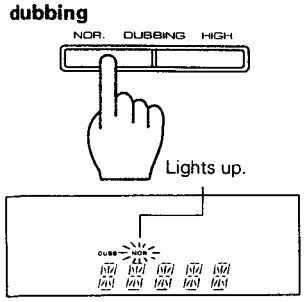
For one-way dubbing

4 Press the A. BIAS (Auto bias) key.

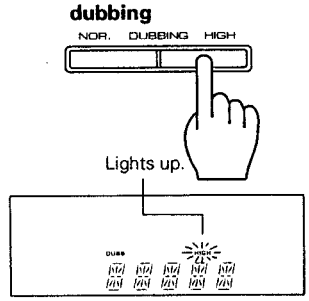
- The optimum bias is set in about 45 seconds, after which the cassette decks enter the stop mode.

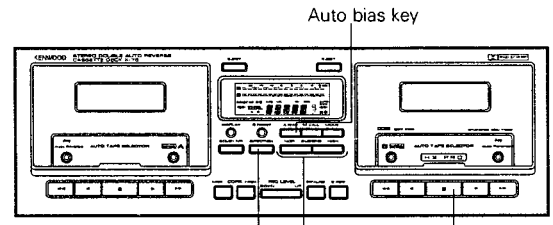
5 Start dubbing.

For normal-speed dubbing



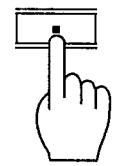
For high-speed dubbing





To stop dubbing

Press the B deck stop key.



- Both Decks A and B enter the stop mode.

To pause dubbing

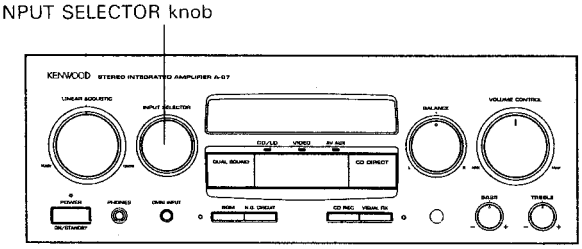
Normal-speed dubbing : Press the NOR. key.
High-speed dubbing : Press the HIGH key.

- Only deck B enters the record-pause mode after leaving a non-recorded space of about 4 seconds in case of normal-speed dubbing, or about 6 seconds in case of high-speed dubbing.
- To skip tunes you do not want to dub on another tape during dubbing, press the ►► key of Deck A.
- To resume dubbing after pause, press the same DUBBING key as above (NOR. or HIGH) again.

Notes:
1. The recording level cannot be adjusted for dubbing.
2. The DOLBY NR key does not function during dubbing. The tape recorded by dubbing features the same NR system as the original tape in Deck A.
3. Noise from TV may interfere with dubbed sound if high-speed dubbing is executed near a TV set. To prevent this, install the system farther from the TV set.
4. If the original tape was recorded at a high level, the sound quality may be degraded if high-speed dubbing is used. In such a case, use normal-speed dubbing.

How to use video components

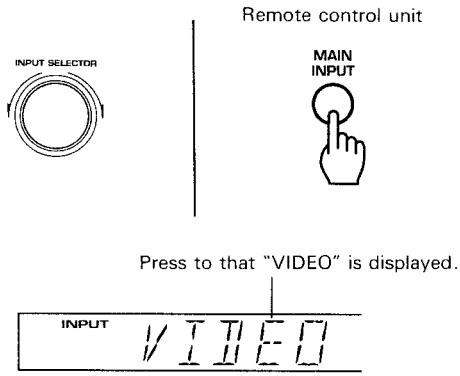
For the connections of AV components, refer to page 12. For the connections and operations, also refer to the instruction manual provided with the connected audio/ video component.



■ Playing a video tape

1 Turn ON the power of the monitor TV.

2 Select the VIDEO input.



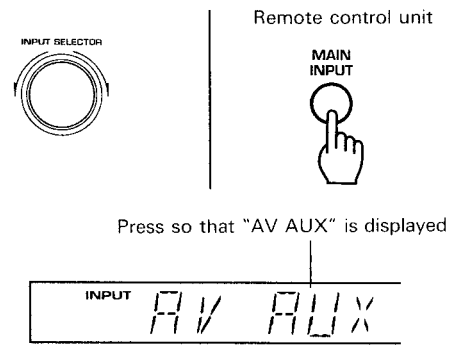
3 Start playing the video deck.

■ Recording onto video tape

1 Connect the source component to be recorded.

- Connect a video player, video camera (play only) or BS tuner to the AV AUX input jacks.

2 Select the AV AUX input.

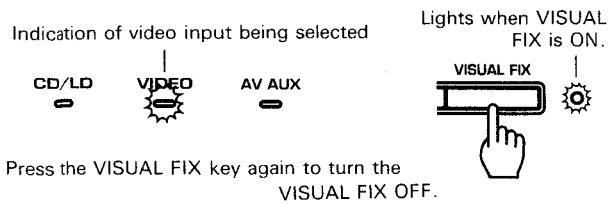


3 Play the source to be recorded.

4 Start recording on the video deck.

VISUAL FIX key

This function fixes the video input source (CD/LD, VIDEO, AV AUX) regardless of changes in the input selection. While a video source input is selected and the VISUAL FIX key is ON, the video does not change even when another input which involves video is selected.


Indication of video input being selected
Lights when VISUAL FIX is ON.
CD/LD
VIDEO
AV AUX
VISUAL FIX
Press the VISUAL FIX key again to turn the VISUAL FIX OFF.

Timer operations

Be sure to adjust the present time before proceeding to the following.

The timer of the system can be used for the following functions.

Program timer .....**Receives broadcast, records broadcast or plays tape or CD at the specified ON time, and switches power OFF at the specified OFF time. Up to six timer programs can be set. The AI TIMER functions can be added to the program timer function.**

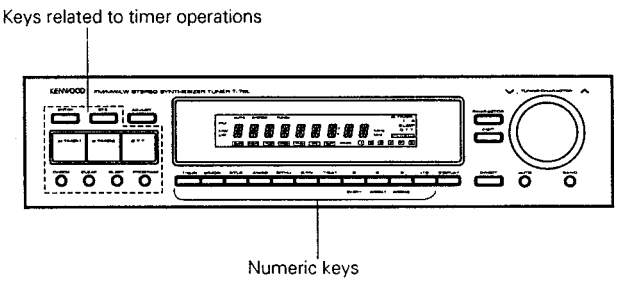
AI TIMER 1 .....**When the power is switched ON at the timer ON time, the volume will increase in three steps, providing a wake-up effect like an alarm clock.**

AI TIMER 2 .....**When the power is switched ON at the timer ON time, two tracks of a CD is played first, then the input is switched automatically to the tuner.**

Sleep timer .....**Switches power OFF after a set time period has elapsed. If set before you go to bed, power can be switched OFF automatically even after you fell in sleep.**

One-touch timer .....**Switches power ON after a specified time period, set in the unit of 30 minutes up to 12 hours, from the moment it is activated. The AI TIMER functions can be added to the one-touch timer function.**

Calendar check .....**When the year, month and day are input in this order, the day of the week of that date is displayed by means of an indicator.**



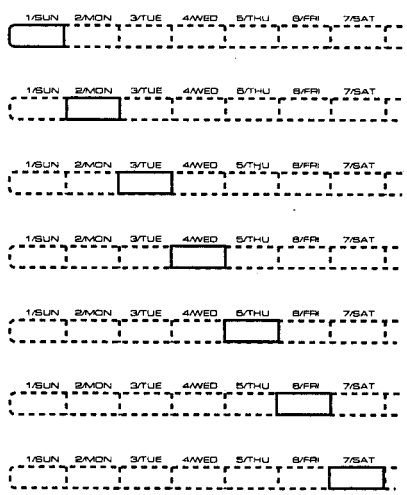
- For the timer setting procedures, read description on the next page and after.
- The contents of timer programs can be modified as required.
- Even when a timer program has been input, the timer will not be activated unless its execution has been activated.
- Turn the AI TIMER functions OFF when they are not required; otherwise, they will be added to all of the programs executed on that day.
- Once set, the contents of a program cannot be cleared at once. The previous contents can only be cleared when they are replaced by modification.
- The programs must be set so that their time ranges do not overlap.

Types of days of the weeks which can be selected by numeric keys

1. To execute a program only once on the specified day of the week after its execution has been activated.

Numeric keys

Sunday
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday

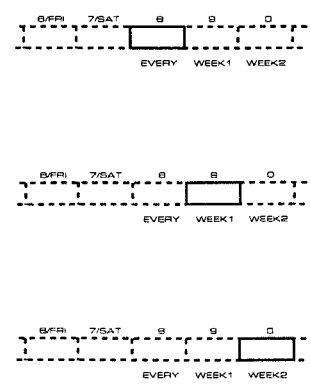


- It is required to activate the timer in the same time period of the next week, activate the execution again.

2. To execute a program repeatedly on every week after its execution has been activated.

Numeric keys

Everyday from Monday to Sunday
Everyday from Monday to Saturday
Everyday from Monday to Friday



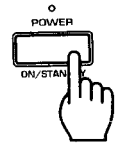
- If timer operation is not required, cancel the program execution.

Be sure to adjust the present time before proceeding to the following.

■ Timer reception of radio broadcast

1 Switch the power ON.

Press the [POWER] key of the amplifier.

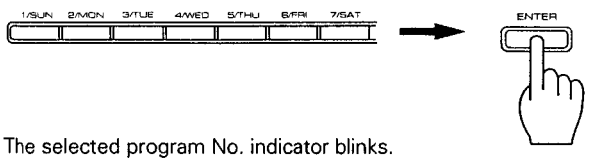


2 Select the program setting mode.

- The program No. indicators (1 to 6) blink.

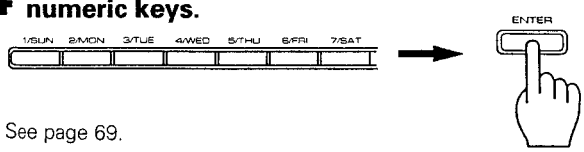
3 Select the program No. to be used.

Select from 1 to 6. Press within 10 seconds.



- The selected program No. indicator blinks.

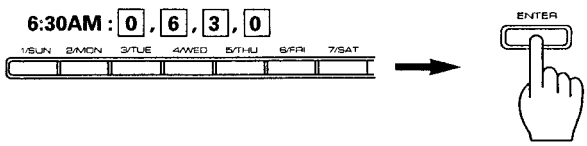
4 Specify the day(s) of the week with the numeric keys.



- See page 69.

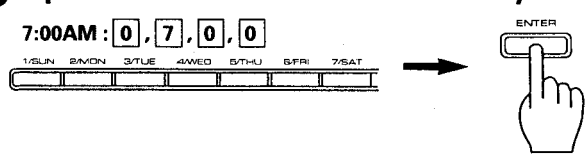
5 Input the ON time with the numeric keys.

6:30AM : [0], [6], [3], [0]

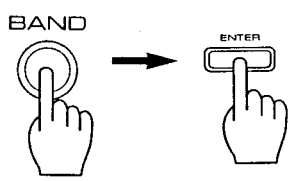


6 Input the OFF time with the numeric keys.

7:00AM : [0], [7], [0], [0]

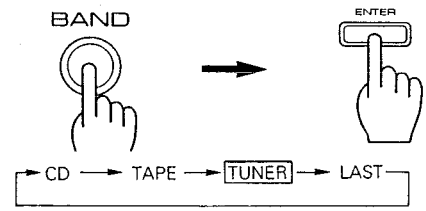


7 Select the PLAY mode.



The timer modes are switched between PLAY and REC every time the [BAND] key is pressed.

8 Select the TUNER source.



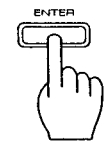
The sources are switched every time the [BAND] key is pressed.

- When listening, select "LAST", the input source (DBS tuner etc.) connected to the auxiliary terminal. Step 9 can be omitted also.

9 Select the preset key under which the station to be received has been preset.

① **Press the numeric key.**

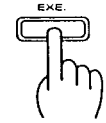
② **Press the [ENTER] key.**



- The station must be preset previously.

10 Activate the execution of the program.

① **Press the [EXE.] key.**



② **Select the program No. to be executed by pressing the numeric key under which it is set.**

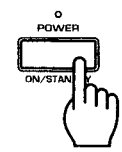
- The selected program No. indicator lights up.

11 Adjust the volume and tone.

- Adjust the volume while playing the source to be played.

12 Switch the power OFF.

Press the [POWER] key of the amplifier.



To continue the reception of radio station which as been started to be received by timer ON.

① **Press the [CLEAR] key before the OFF time comes.**
② **Press the numeric key for the program No. being executed.**

- When the program No. indicator goes off, it means that the program will be received continuously.

Notes:

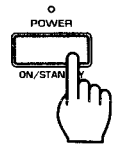
1. If you commit a mistake in the timer programming, press the [CLEAR] key and re-start from the beginning.
2. If it is required to modify a program which has already been set, set a new program from the beginning.
3. When a program has previously been set in the program No. selected in step 3, the newly-set program replaces the previous program.
4. Do not operate the [CLEAR] key or [POWER] key while the time program execution has been activated; otherwise malfunction will occur.

Be sure to adjust the present time before proceeding to the following.

■ Timer playback of CD

1 Switch the power ON.

Press the [POWER] key of the amplifier.

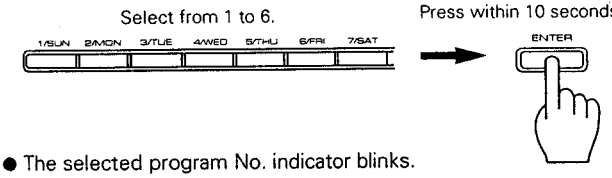


2 Select the program setting mode.

- The program No. indicators (1 to 6) blink.

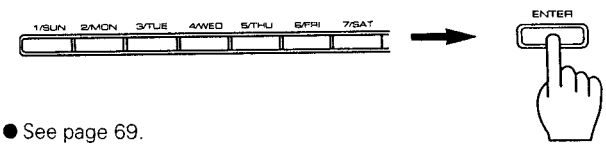
3 Select the program No. to be used.

Select from 1 to 6. Press within 10 seconds.



- The selected program No. indicator blinks.

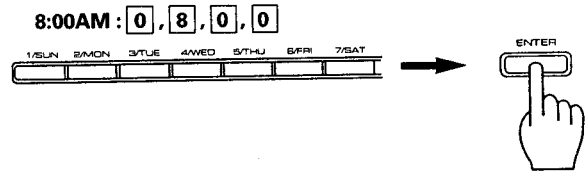
4 Specify the day(s) of the week with the numeric keys.



- See page 69.

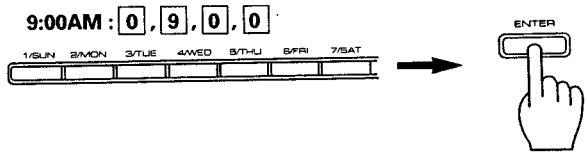
5 Input the ON time with the numeric keys.

8:00AM : [0], [8], [0], [0]

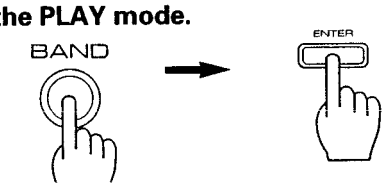


6 Input the OFF time with the numeric keys.

9:00AM : [0], [9], [0], [0]

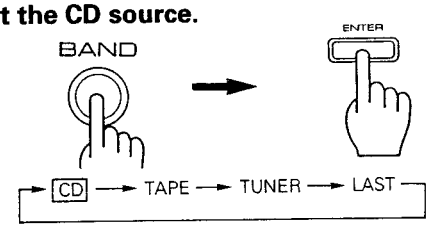


7 Select the PLAY mode.



The timer modes are switched between PLAY and REC every time the [BAND] key is pressed.

8 Select the CD source.



The sources are switched every time the [BAND] key is pressed.

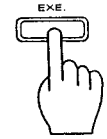
9 Place a disc in the CD player.

Place the disc on the plus 1 tray and close the door. (For the M-97M system)

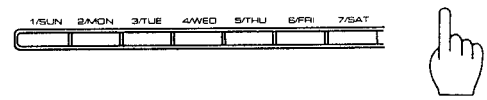
- It is not possible to preset a CD playback programs.

10 Activate the execution of the program.

① **Press the [EXE.] key.**



② **Select the program No. to be executed by pressing the numeric key under which it is set.**



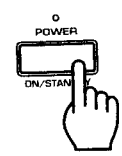
- The selected program No. indicator lights up.

11 Adjust the volume and tone.

- Adjust the volume while playing the source to be played.

12 Switch the power OFF.

Press the [POWER] key of the amplifier.



Notes:

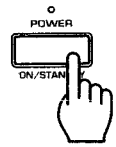
1. If you commit a mistake in the timer programming, press the [CLEAR] key and re-start from the beginning.
2. If it is required to modify a program which has already been set, set a new program from the beginning.
3. When a program has previously been set in the program No. selected in step 3, the newly-set program replaces the previous program.
4. Do not operate the [CLEAR] key or [POWER] key while the time program execution has been activated; otherwise malfunction will occur.

Be sure to adjust the present time before proceeding to the following.

■ Timer playback of tape

1 Switch the power ON.

Press the [POWER] key of the amplifier.

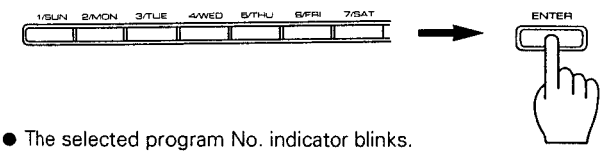


2 Select the program setting mode.

- The program No. indicators (1 to 6) blink.

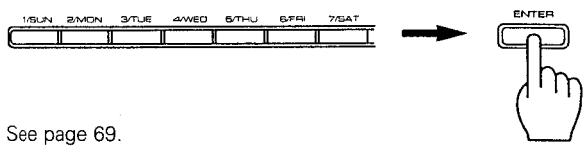
3 Select the program No. to be used.

Select from 1 to 6. Press within 10 seconds.



- The selected program No. indicator blinks.

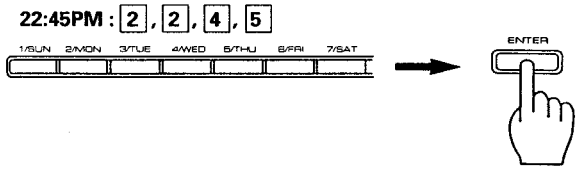
4 Specify the day(s) of the week with the numeric keys.



- See page 69.

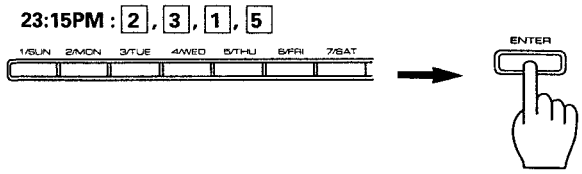
5 Input the ON time with the numeric keys.

22:45PM : [2], [2], [4], [5]



6 Input the OFF time with the numeric keys.

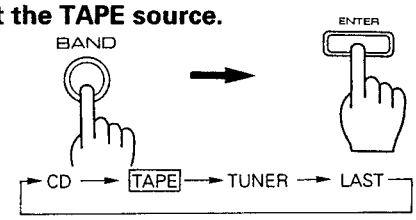
23:15PM : [2], [3], [1], [5]



7 Select the PLAY mode.

The timer modes are switched between PLAY and REC every time the BAND key is pressed.

8 Select the TAPE source.



The sources are switched every time the BAND key is pressed.

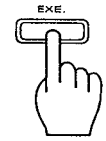
9 Insert a tape and determine the playback condition.

Select the side(s) to be played (DIRECTION key) and the Dolby NR mode (Dolby NR key).

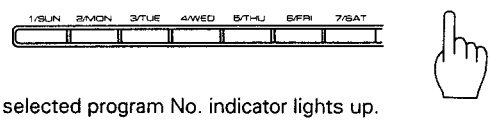
- Timer playback is possible with either Deck A or Deck B. However, if tapes are placed in both decks, playback will begin from Deck A.

10 Activate the execution of the program.

① Press the [EXE.] key.



② Select the program No. to be executed by pressing the numeric key under which it is set.

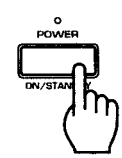


- The selected program No. indicator lights up.

11 Adjust the volume and tone.

12 Switch the power OFF.

Press the [POWER] key of the amplifier.



Notes:

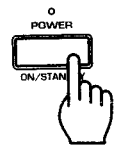
1. If you commit a mistake in the timer programming, press the [CLEAR] key and re-start from the beginning.
2. If it is required to modify a program which has already been set, set a new program from the beginning.
3. When a program has previously been set in the program No. selected in step 3, the newly-set program replaces the previous program.
4. Do not operate the [CLEAR] key or [POWER] key while the time program execution has been activated; otherwise malfunction will occur.

Be sure to adjust the present time before proceeding to the following.

■ Timer recording of radio broadcast

1 Switch the power ON.

Press the [POWER] key of the amplifier.

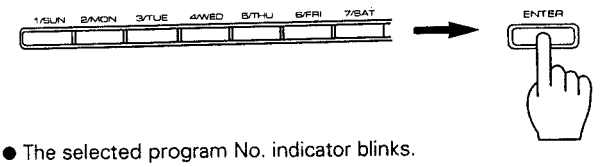


2 Select the program setting mode.

● The program No. indicators (1 to 6) blink.

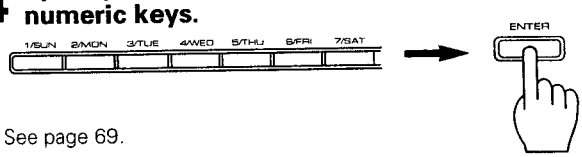
3 Select the program No. to be used.

Select from 1 to 6. Press within 10 seconds.



● The selected program No. indicator blinks.

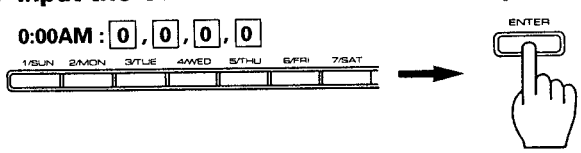
4 Specify the day(s) of the week with the numeric keys.



● See page 69.

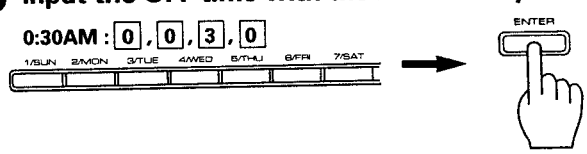
5 Input the ON time with the numeric keys.

0:00AM : [0], [0], [0], [0]

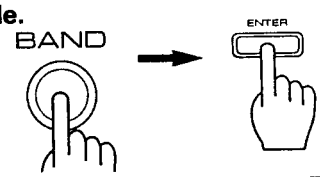


6 Input the OFF time with the numeric keys.

0:30AM : [0], [0], [3], [0]



7 Select the REC mode.

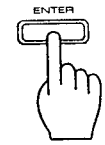


The timer modes are switched between PLAY and REC every time the [BAND] key is pressed.

8 Select the key under which the station to be received has been preset.

① **Press the numeric key.**

② **Press the [ENTER] key.**



● The station must be preset previously.

9 Set up the cassette deck ready for recording.

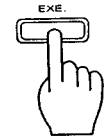
① **Insert a tape in Deck B.**
② **Set the tape transport direction.**
③ **Select the side(s) to be recorded onto.**
④ **Select the Dolby NR mode.**

● The auto-bias adjustment cannot be used.

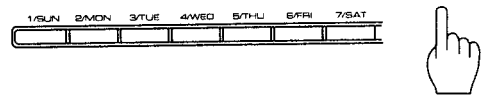
10 Adjust the recording level.

11 Activate the execution of the program.

① **Press the [EXE.] key.**



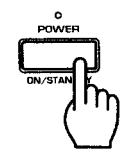
② **Select the program No. to be executed by pressing the numeric key under which it is set.**



● The selected program No. indicator lights up.

12 Switch the power OFF.

Press the [POWER] key of the amplifier.



Notes:
1. If you commit a mistake in the timer programming, press the [CLEAR] key and re-start from the beginning.
2. If it is required to modify a program which has already been set, set a new program from the beginning.
3. When a program has previously been set in the program No. selected in step 3, the newly-set program replaces the previous program.
4. When the power supply is turned on with the timer, the sound volume is set at the lowest level.
5. Do not operate the [CLEAR] key or [POWER] key while the time program execution has been activated; otherwise malfunction will occur.

Be sure to adjust the present time before proceeding to the following.

■ To check timer program contents

1 **Press the PROGRAM key.**

2 **Press the numeric key corresponding to the program to be checked.**

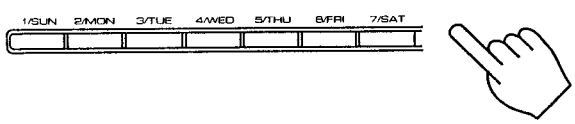
- If no program is selected while the program No. indicators are blinking, the previous display condition resumes.
- When a program is selected, its contents will be displayed for about 3 seconds, and the previous display resumes after it.

■ To cancel timer program execution

1 **Press the CLEAR key.**

2 **Press the numeric key corresponding to the program the execution of which is to be cleared.**

Select the number with a numeric key.



- The program contents are not cleared even when its execution is canceled.

Re-activation of timer execution after canceling it

Since the program itself is retained in memory, check its contents and perform the operation from the step "Activate the execution of the program" as follows.

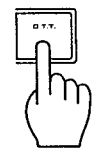
① **Press EXE. key.**
② **Select the program No. to be executed by pressing the numeric key under which it is set.**
③ **Adjust the volume and tone in case of timer reception of broadcast or timer playback of CD or tape.**
④ **Switch the power OFF.**

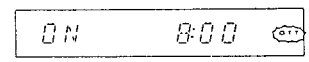
■ Operation of one-touch timer

The one-touch timer allows to switch power ON after a specified time period, set in the unit of 30 minutes, from the moment it is activated.

1 **Set the timer ON time.**

Press the O.T.T. key. O.T.T. lights up.



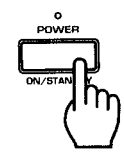


The ON time of timer is displayed. The displayed time is incremented by 30 minutes every time the key is pressed.

- When the key is pressed once, a time that can be divided by 30 minutes and within 30 minutes from the present time is displayed as the ON time. (Example: When pressed at 7:40, "8:00" will be displayed.)
- The ON time is incremented in 30-minute steps, for example from 0:00 to 0:30, 1:00, 1:30, and so on.
- The ON time can be set up to 12 hours later.
- The one-touch timer can be set even when the power is OFF.

2 **Switch the power OFF.**

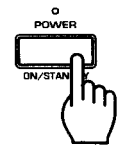
Press the POWER key of the amplifier.

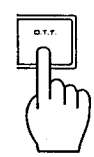


- The ON time can be checked by pressing the O.T.T. key once.
- When the power is switched ON, the sleep timer will automatically be set to 60 minutes.
- When the power is switched ON, the last station received by the tuner will be received.

To cancel one-touch timer activated

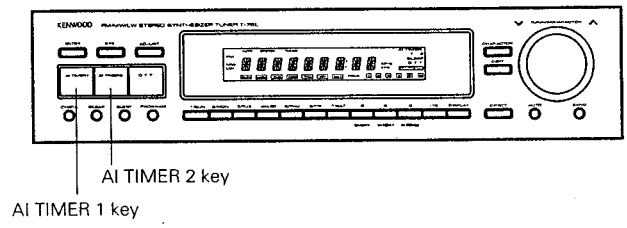
Switch the power ON **or** **Press the O.T.T. key until the O.T.T. indicator goes off.**





Notes:
1. If time adjustment is performed after the ON time has been set, the ON time setting is canceled. In this case, execute setting once again.
2. The one-touch timer is released when the ADJUST key is pressed.

After setting the timer, one of the following operations can be added by pressing the AI TIMER keys. The AI TIMER 1 and AI TIMER 2 do not function in the timer recording mode.



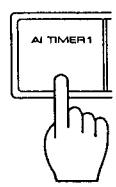
■ Operation of AI TIMER 1

With this function, when the power is switched ON by the program timer, the listening volume of the component increases in three steps.

1 Set the timer playback of program timer.

Switch the power of the amplifier OFF.

2 Press the [AI TIMER 1] key.



- The [AI TIMER 1] indicator lights up.

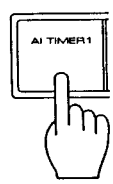
Select the maximum volume.

VOL1 (Small) → VOL2 (Intermediate) → VOL3 (Maximum) → OFF

- The display of the volume changes every time the key is pressed. When the key is released, the display goes off and the volume level at that moment is stored in the memory.

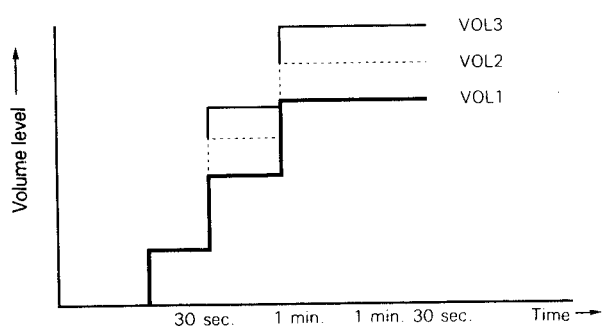
To cancel AI TIMER 1

Press the [AI TIMER 1] key to select "OFF".



- The [AI TIMER 1] indicator goes off.

Reference for volume selection



- The [VOLUME CONTROL] knob rotates as the volume changes.

■ Operation of AI TIMER 2

With this function, when the power is switched ON by the program timer, two tracks on the CD is played first, then the broadcast from the tuner is received automatically. This function is given the highest priority over other program timer functions.

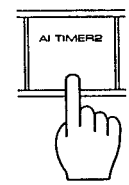
1 Place a disc in the CD player.

Place the disc on the plus 1 tray and close the door. (For the M-97M System)

2 Perform operations of "Timer reception of radio broadcast".

● Refer to page 70.

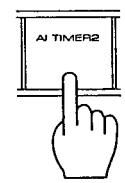
3 Press the [AI TIMER 2] key.



- The [AI TIMER 2] indicator lights up.
- Also press the [AI TIMER 1] key if you want to increase the volume in three steps.

To cancel AI TIMER 2

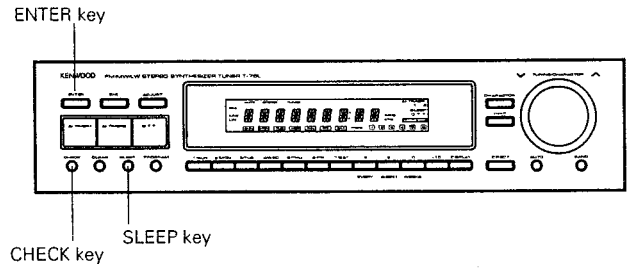
Press the key again.



- The [AI TIMER 2] indicator goes off.

Notes:

1. When the operation keys of the graphic equalizer or the [VOLUME CONTROL] key on the remote control unit is pressed while the AI TIMER 1 function is carried out, the volume is fixed at the level being set.
2. If the TUNER or TAPE input selector is selected during the CD playback of AI TIMER 2, the CD playback stops there and the AI TIMER 2 function is canceled.
3. If the operation keys of the CD player is pressed during the CD playback of AI TIMER 2, the CD playback stops there and the AI TIMER 2 function is canceled.
4. If the CD has not been inserted, reception of radio broadcast starts at the moment AI TIMER 2 is activated.
5. Even when the program timer operation has completed, the AI TIMER 1 and 2 indicators do not go off. Be sure to turn off the indicators when the AI TIMER 1 and/or 2 is not required any more.

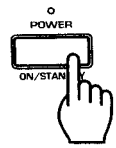


■ Operation of Sleep timer

The sleep timer allows to turn the system power off after the specified period has elapsed. This function may be most convenient when you like to fall in sleep while listening to music.
The period can be set up to 90 minutes in 10-minute steps. The sleep timer is applied in priority over other timer programs.

1 Switch the power ON.

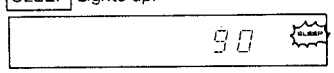
Press the [POWER] key of the amplifier.



2 Specify the period after which the power is to be switched OFF.

Press the [SLEEP] key.

[SLEEP] Lights up.



90 → 80 → 70 → ····· → 20 → 10 → canceled

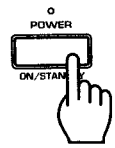
- Each press decreases the period by 10 minutes.

To cancel Sleep Timer

Press the [SLEEP] key until the sleep timer is canceled

or

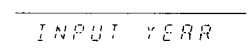
Switch the power OFF.



■ Operation of calendar check

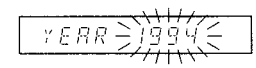
The calendar check allows to display the day of the week of the specified date input by the user in the order of year, month and day. This function covers the range from January 1, 1900 to December 31, 2099.

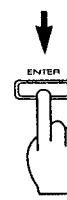
1 Press the [CHECK] key.

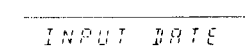


2 Input the year with the numeric keys.

Year 1994 : [1], [9], [9], [4]

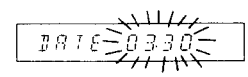


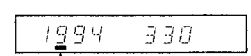




3 Input the month then the day with the numeric keys.

March 30 : [0], [3], [3], [0]





Day of the week

- The day-of-the-week indicator of the date input above lights up. The previous display resumes in a few seconds.

In case of difficulty

What appears to be a malfunction may not always be serious. If your unit should not perform as expected, consult the table below to see if the problem can be corrected before seeking help from your dealer or service representative.

Remote control unit

Symptom	Cause	Remedy
Remote control operation is not possible.	● Batteries are exhausted. ● The audio cords and the system control cords are not connected properly. ● The remote control unit is too far away from the main system, controlling angle is too large, or there is an obstacle in between. ● The source component to be operated does not contain the analog disk, tape(s) or CD. ● An attempt is made to play a tape which is being recorded in the cassette deck.	● Replace with new batteries. ● Connect properly referring to provided Connecting diagram. ● Operate the remote control unit within the controllable range. ● Place an analog disk, tape(s) or CD in the source component to be played. ● Wait until the recording is completed.

Amplifier, speakers

Symptom	Cause	Remedy
Sound is not output.	● The speaker cords are disconnected. ● The VOLUME CONTROL knob is set to the minimum position. ● The MUTE key is set to ON and the point indicator is blinking. ● The LINEAR ACOUSTIC control knob is turned to the fully "MAIN" or "OMNI" position. ● The headphones plug is left inserted in the PHONES jack.	● Connect properly referring to provided Connecting diagram. ● Adjust the volume to a proper level. ● Press the MUTE key to OFF. ● Turn it to a proper position. ● Remove the plug.
Sound is not output from the omnidirectional speaker (optional).	● The LINEAR ACOUSTIC control knob is fully turned to the MAIN position. ● The DUAL SOUND is set to OFF (DUAL SOUND indicator goes off). ● The speaker cord is disconnected. ● The OMNI LEVEL control is set to the minimum level. (S. 4ch mode)	● Turn the LINEAR ACOUSTIC control knob to proper position. ● Press the DUAL SOUND key to ON. ● Connect properly referring to "System connections". ● Adjust the OMNI LEVEL controls.
Sound is not output from the Surround rear speaker and/or center speaker, or their sound is very small.	● The rear-speaker cords and / or center speaker cord are disconnected. ● The Surround play mode has not been engaged. ● The REAR LEVEL. and / or CENTER LEVEL. controls are set to the minimum level.	● Connect properly referring to "System connections. ● Set the Dolby Surround or DSP presence mode. ● Adjust the REAR LEVEL. and CENTER LEVEL. controls.
No sound is heard from the headphones.	● The LINEAR ACOUSTIC control knob is turned to the fully "OMNI" position. ● The music is played through the OMNI input.	● Turn the control knob counterclockwise toward "MAIN". ● Play through the MAIN input.
No sound comes out, and "PROTECT" is shown on the display.	● Speaker cords are short-circuited.	● Unplug the power cord, eliminate the short-circuiting, then turn on the power again.
Sound is not output from one of the speakers.	● The speaker cord is disconnected. ● The BALANCE control is set to an extreme position.	● Connect properly referring to provided Connecting diagram. ● Adjust the Left/Right balance.
Sound becomes distorted.	● Tone control is set completely to the right.	● Adjust the tone control to the center.
A hum noise is generated when the PHONO input selector key is pressed.	● The audio cord from the turntable is not inserted securely into the PHONO jacks. ● The turntable is not grounded.	● Insert the audio cord plugs securely into the PHONO jacks. ● Connect the grounding wire to the GND terminal on the rear panel.

Tuner

Symptom	Cause	Remedy
The clock display is blinking without changing from a certain time.	● There was a power failure. ● The power cord was unplugged.	● Set the current time again. ● Set the current time again.
The timer does not work.	● The current time is not set, or there was a power failure. ● The timer ON time and OFF time have not been set. ● The timer execution has not been specified.	● Set the current time referring to "Time adjustment". ● Set the timer ON time and OFF time. ● Specify execution by pressing the EXE. key.
Radio stations cannot be received.	● No antenna is connected. ● The broadcast band is not set properly. ● The frequency of the desired station is not tuned.	● Connect an antenna. ● Set the broadcast band properly. ● Tune the frequency of the desired station.
A station which was preset cannot be received by pressing the corresponding numeric key.	● The preset station belongs to a frequency that cannot be received. ● The preset memory was cleared because the power cord had been unplugged for a long period of time.	● Preset a station with a receivable frequency. ● Preset the station again.
Interference.	● Noise due to ignition noise of an automobile. ● Noise due to an influence from an electric appliance. ● Noise due to a nearby TV set.	● Install the outdoor antenna apart from the road. ● Turn off the power of the appliance. ● Install the system more apart from the TV set.

CD player

Symptom	Cause	Remedy
Disc is loaded, player does not play.	● Disc is loaded upside down. ● Disc is loose. ● Disc is dirty. ● Disc is cracked. ● Condensation occurred on the optical lens unit.	● Load the disc again with its label side up. ● Insert the disc properly. ● Wipe off the dust on the surface of the disc referring to "Disc handling precautions". ● Replace the disc with a new one. ● Leave the player for about 1 hour so that the condensation is removed.
No sound.	● Disc is not loaded. ● Disc is too dirty. ● Disc is cracked. ● The connection cords are inserted loosely.	● Load a disc. ● Wipe off the dust on the disc surface referring to "Disc handling precautions". ● Replace the disc with a new one. ● Connect all connection cords firmly.
Music is interrupted. (Sound is skipped.)	● Disc is too dirty. ● Disc is cracked. ● Oscillation is applied to this unit.	● Wipe off the dust on the disc surface referring to "Disc handling precautions". ● Replace the disc with a new one. ● Try selecting a place where no strong vibrations occur by changing the installation place, etc.

Cassette decks

Symptom	Cause	Remedy
Sounds is not produced when the Play key is pressed.	● The connection cords are connected improperly. ● The head is dirty. ● Tape is irregularly wound and hard to take up. ● A non-recorded tape is being played.	● Connect properly referring to provided Connecting diagram. ● Clean the head referring to "Cleaning the head section". ● Replace the tape. ● Play a recorded tape.
The deck does not work when an operation key is pressed.	● The cassette holder is not closed completely. ● The operation key was pressed immediately after closing the cassette holder. ● The operation key was pressed within less than 3 seconds after the power was turned on. ● Tape is not inserted. ● Tape is irregularly wound and hard to take up. ● Tape has been fully wound to reel.	● Close the cassette holder completely. ● Press the desired operation key in a few seconds after closing the cassette holder. ● Press the desired operation key in more than 3 seconds after turning the power on. ● Insert a tape. ● Replace the tape. ● Change the tape transport direction or insert the tape inversely.
DPSS malfunctions.	● The tape is not suitable for DPSS operation, for example the spaces between tunes are too short.	● Read "DPSS operation".
CCRS does not work.	● A recordable tape is not inserted in Deck B. ● A disc is not placed in the CD player. ● The disc is dirty.	● Insert a recordable tape in Deck B and press the CCRS key. ● Place a disc in the CD player and press the CCRS key. ● Clean the disc, place it in the CD player, and press the CCRS key.
The dubbing on Deck A and Deck B ends at different timing.	● This is due to the difference in tape length or to the characteristics of the cassette deck mechanisms.	● A small time difference is not regarded as a failure.
The cassette holder does not open when the eject key is pressed.	● The key is pressed during recording or playback. ● Micro processor malfunctions due to external interference.	● Press in the Stop mode. ● Disconnect the power plug and connect it again.
Sound is hoarse, or high frequencies are not audible.	● The head is dirty. ● The tape is stretched or wrinkled.	● Clean the head referring to "Cleaning the head section". ● Replace the tape.
Sound is distorted.	● The recording level was too high. ● A tape recorded with distorted sound is being played.	● Adjust the recording level referring to "Recording operation on cassette deck". ● Replace the tape.
Recording is not initiated when the ●REC key is pressed.	● The protection tab on the cassette has been broken. ● The cassette holder is not closed completely. ● The recording level is set to the minimum position. ● The TAPE A or B input selector is selected on the amplifier. ● Tape has been fully wound to a reel.	● Use a cassette with unbroken tab or close the hole. ● Close the cassette holder completely. ● Adjust the recording level referring to "Recording operation on cassette deck". ● Press the input selector key of the source to be recorded. ● Change the tape transport direction of Deck B or insert the tape inversely.
Noise level is high.	● The head is magnetized. ● External noise is induced. ● The recording level was too low. ● A tape recorded with Dolby NR ON is being played with Dolby NR OFF.	● Demagnetize the head referring to "Cleaning the head section". ● Install the system apart from other electrical appliances and TV set. ● Adjust the recording level referring to "Recording operation on cassette deck". ● Press the DOLBY NR key to B or C.
Sound is vibrating.	● The capstans or pinch rollers are dirty. ● Tape is irregularly wound.	● Clean the head referring to "Cleaning the head section". ● Wind the tape regularly by fast forwarding, rewinding or playing it fully from one reel to another.

Notes:
1. With some tapes, a squeaky noise is produced when the tape is topped automatically. This is due to the tape protection function, and not a malfunction.
2. Do not use 120-minute tapes, for the tape is too thin and gets easily tangled.
3. This system is microprocessor-controlled, so malfunction may occur due to external noise or interference noise. In such a case, unplug the power cord, plug it and turn power on again.
4. Do not use contact cleaners because it could cause a malfunction. Be specially careful against contact cleaners containing oil, for they may deform the plastic components.

Specifications

⚠ **Caution: Read this page carefully to ensure safe operation.**

For the M-97/97M system

Amplifier A-97

Rated power output at the STEREO opration
(IEC/NF) from 63 Hz to 12,500Hz, 0.7% T.H.D.
at 8Ω ..... 85W+85W
(DIN) 1,000Hz at 8Ω ..... 85W+85W

Power output at the Surround opration
Front (1kHz, 0.08% T.H.D. at 8Ω) .....85W+85W
Omni (1kHz, 0.5% T.H.D. at 8Ω) .....25W+25W
Center (1kHz, 0.5% T.H.D. at 8Ω) 25W
Rear (1kHz, 0.5% T.H.D. at 8Ω) .....25W+25W

Total harmonic distortion (1kHz, 8Ω).....0.02% at 40W

Signal to noise ratio (IHF'66)
PHONO (MM) 72dB
CD/LD, TAPE 90dB
Signal to noise ratio (DIN weighted at 50mW output)
PHONO (MM) 56dB
CD/LD, TAPE 57dB
Input sensitivity/impedance
PHONO (MM) 2.5mV/47kΩ
CD/LD, TAPE 200mV/47kΩ
Tone controls
BASS .....±10dB (at 100Hz)
TREBLE .....±10dB (at 10kHz)

VIDEO inputs/outputs
(composite) 1Vp-p/75Ω

General
Power consumption..... 280W
Dimensions .....**W** : 360 mm
H : 129 mm
D : 378 mm
Weight (net) 11.3kg
AC outlets (switched) ..... 1 (Total 200W max)

Tuner T-76L

FM tuner section
Tuning frequency range ..... 87.5MHz~108MHz
Antenna impedance.....75Ω unbalanced
Sensitivity (DIN)
MONO 0.6μV
STEREO 25μV
Total harmonic distortion (DIN at 1kHz, 65.2dBf input)
MONO 0.3%
STEREO 0.8%
Signal to noise ratio
(DIN weighted at 1kHz, 65.2dBf input)
MONO 70dB
STEREO 63dB
Selectivity (DIN ±300kHz)..... 64dB
Stereo separation (DIN at 1kHz)..... 42dB
Sub carrier suppression (DIN)..... 55dB (at 19kHz)
65dB (at 38kHz)
Frequency response..... 30Hz~15kHz, +0.5dB, -3.5dB

MW Tuner section
Tuning frequency range .....531kHz~1,602kHz
Usable sensitivity..... 13μV/(500μV/m)
Total harmonic distortion 0.6%
Signal to noise ratio 50dB
Selectivity.....23dB

LW Tuner section
Tuning frequency range .....153kHz~281kHz
Usable sensitivity.....20μV
Total harmonic distortion 0.5%
Signal to noise ratio 47dB
Selectivity.....30dB

General
Dimensions.....**W** : 360 mm
H : 89 mm
D : 370 mm
Weight (net)..... 2.6kg

Cassette deck X-87

Type.....4-track 2-channel stereo
Recording system
..... AC bias system (Bias frequency: 105kHz)
Tape speed ..... 4.76cm/sec.
Heads
Playback/Record head ..... 1 (B deck)
Playback head..... 1 (A deck)
Erasing head ..... 1 (B deck)
Motors .....1 (each deck)
Fast winding time.....Approx. 110 seconds with C-60 tape

Frequency response
Normal tape .....30Hz to 18,000Hz ±3dB
CrO_2 tape .....30Hz to 19,000Hz ±3dB
Metal tape .....30Hz to 20,000Hz ±3dB

Signal to noise rato
Dolby C NR ON ..... 75dB (Metal tape)
Dolby B NR ON ..... 67dB (Metal tape)
Dolby NR OFF ..... 58dB (Metal tape)

Harmonic distortion .....Less than 0.7%
(at 1kHz, 0dB 3rd H.D. Metal/Normal tape)
Wow and flutter.....0.08% (W.R.M.S.) ±0.16% (DIN)

General

Dimensions .....**W** : 360 mm
H : 119 mm
D : 355 mm
Weight (net) 3.8kg

For the M-97M system

CD Player DP-M87

[Format]
System ..... Compact disc digital audio system
Laser ..... Semiconductor laser
Number of channels ..... 2 channels
Playing rotation ..... 200 rpm ~ 500 rpm (CLV)

[D/A Convertors]
D/A conversion ..... 1 Bit
Oversampling ..... 8 fs (352.8 kHz)

[Audio]
Frequency response ..... 20Hz ~ 20kHz, ±1.0 dB
Signal to noise ratio ..... More than 96 dB
Dynamic range ..... More than 90 dB
Total harmonic distortion ..... Less than 0.005%

Channel separation ..... More than 90dB
Wow & flutter ..... Unmeasurable Limit
Output level/impedance
Fixed ..... 1.2V/ 1 kΩ

[General]
Dimensions ..... **W** : 360 mm
H : 90 mm
D : 353 mm
Weight (Net) ..... 4.1 kg

For the M-97 system

CD Player DP-97

[Format]
System ..... Compact disc digital audio system
Laser ..... Semiconductor laser
Number of channels ..... 2 channels
Playing rotation ..... 200 rpm ~ 500 rpm (CLV)

[D/A Convertors]
D/A conversion ..... 1 Bit
Oversampling ..... 8 fs (352.8 kHz)

[Audio]
Frequency response ..... 8Hz ~ 20kHz, ±1.0 dB
Signal to noise ratio ..... More than 94 dB
Dynamic range ..... More than 92 dB
Total harmonic distortion ..... Less than 0.005%

Channel separation ..... More than 85 dB
Wow & flutter ..... Unmeasurable Limit
Output level/impedance
Fixed 1.2V/3.3kΩ

[General]
Dimensions ..... **W** : 360 mm
H : 89 mm
D : 353 mm
Weight (Net) ..... 2.9 kg

Strömbrytarens POWER beredskapsläge

Indikatorm STAND BY tänds efter nätkabelns anslutning till ett väggutag, oavsett strömbrytarens POWER till/fränslag. Detta anger att en liten mängd ström leds till komponenten som stöd för minnesinnehållet.
Detta läge kallas för beredskapsläget. Strömbrytaren på fjärrkontrollen kan användas för att slå på och av strömmen så länge indikatorn STAND BY lyser.

Virtanäppäimen (POWER) valmiustila (STAND BY)

Kun laitteen verkkojohto on liitetty pistorasiaan, valmiustilan merkkivalo syttyy riippumatta virtanäppäimen (POWER) asennosta (ON/OFF). Merkkivalo osoittaa, että laitteessa on hieman virtaa muistin sisältöjen ylläpitoa varten. Tätä tilaa kutsulaan valmiustilaksi. Kun valmiustilan merkkivalo (STAND BY) palaa, laitteen virta voidaan kytkeä ja katkaista kaukosäätimellä.

Afbrydertastens (POWER) STAND BY funktion

Når apparatets strømledning er tilsluttet en stikkontakt, lyser STAND BY indikatoren, uanset om der er tændt ved afbryderen på apparatet eller ej. Det angiver, at apparatet bliver forsynet med en ganske lille mængde strøm til opret-holdelse af hukommelsens indhold.
Denne funktion kaldes STAND BY. Når STAND BY indikatoren er tændt, kan strømmen til apparatet slås til og fra med fjernstyringsenheden.

PÅ/AV-knappens Stand-by funksjon

Når strømledningen til dette anlegget er satt i en vekselstrømskontakt, vil STAND BY indikatorlampen lyse enten PÅ/AV-knappen er på-eller avslått. Dette betyr at en viss mengde strøm tilføres anlegget slik at innholdet i minnet ikke går tapt.
Denne funksjonen kalles Stand-by. Når indikatorlampen for STAND-BY er tent, kan strømmen slås PÅ/AV fra fjernkontrollen.

Note:
KENWOOD follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.